NEW: ‘My name is Spartacus’: COVID-19 Deep Dive Part IV: Mind Control

Description

By “Spartacus” – one of the authors of the orginal ‘Spartacus’ paper that went viral in 2021

Government agencies in the US have been experimenting with various mind control techniques for at least seventy years, maybe more. This sets a precedent; the government has displayed an interest in mind control in the past, therefore, there is no reason to assume they would have abandoned such ambitions entirely.

The ultimate goal of these experiments is not to create mind-controlled assets or Manchurian Candidates, as some may think. The goal of these experiments is mass mind control and technological psychosocialization on a societal scale, like with Soma in Huxley’s *Brave New World*.

Theodore Kaczynski was, by all accounts, a gifted mathematician at Harvard. What most people do not realize is that he also suffered through highly unethical psychological experiments there that may have damaged his psyche and led to his radicalization.

Did Ted Kaczynski’s Transformation Into the Unabomber Start at Harvard?

> Kaczynski entered Harvard in 1958 and, one year later, was tapped by psychologist Henry A. Murray to take part in a study exploring the effects of stress on the human psyche—a popular area of research during the Cold War. The experiment enlisted 22 Harvard students to write a detailed essay in which they summarized their worldview and personal philosophy. Then the harsh aspects of the experiment began.
>
> After submitting their essays, each of the students was seated in front of bright lights, wired to electrodes and subjected to what Murray himself described as “vehement, sweeping, and personally abusive” interrogations, during which members of his research team would attack the student subjects’ ideals and beliefs, as gleaned from their essays. The goal was to assess the value of interrogation techniques used by law enforcement and national

> security agents in the field.

In his infamous manifesto, Theodore Kaczynski – influenced by his experiences – later wrote the following:

INDUSTRIAL SOCIETY AND ITS FUTURE

> No social arrangements, whether laws, institutions, customs or ethical codes, can provide permanent protection against technology. History shows that all social arrangements are transitory; they all change or break down eventually. But technological advances are permanent within the context of a given civilization. Suppose for example that it were possible to arrive at some social arrangements that would prevent genetic engineering from being applied to human beings, or prevent it from being applied in such a way as to threaten freedom and dignity. Still, the technology would remain waiting. Sooner or later the social arrangement would break down. Probably sooner, given the pace of change in our society. Then genetic engineering would begin to invade our sphere of freedom, and this invasion would be irreversible (short of a breakdown of technological civilization itself).

What Kaczynski expressed in his manifesto was the very real and valid fear that human beings would become, in essence, an *engineered product*, altered by chemical and genetic conditioning to adapt us to an inhuman and regimented society.

If you take a look around at our surroundings, you will see plenty of evidence for this hypothesis. Long hours, long commutes, electronic device addiction, sedentary lifestyles, stress, anxiety, chronic illness, and billions of dollars' worth of selective serotonin reuptake inhibitor prescriptions are the norm in developed nations. It rarely occurs to people that our technological societies, in spite of their many benefits, could be harming us to such a degree. We seem increasingly tempted to alter ourselves to fit a highly unnatural condition of life, rather than altering our society to fit our intrinsic nature.

The problem with this process is that it doesn't end there. It is a recursive cycle. The alteration of humans will produce in us new impulses that we have never experienced before, which, in turn, will alter our culture, which will compel us to alter ourselves even more to adapt to the new culture, and so on. It doesn't stop. It keeps going until we are either demigods or we're all dead.

In Thorstein Veblen's 1899 book *The Theory of the Leisure Class*, which is now available in the public domain, he argued that the essential goal of the upper classes in human society was to replicate atavistic modes of life.

> As the community passes out of the hunting stage proper, hunting gradually becomes differentiated into two distinct employments. On the one hand it is a trade, carried on chiefly for gain; and from this the element of exploit is virtually absent, or it is at any rate not present in a sufficient degree to clear the pursuit of the imputation of gainful industry. On the other hand, the chase is also a sport— an exercise of the predatory impulse simply. As such it does not afford any appreciable pecuniary incentive, but it contains a more or less obvious element of exploit. It is this latter development of the chase — purged of all imputation of handicraft — that alone is meritorious and fairly belongs in the scheme of life

> of the developed leisure class.

We at ICENI would argue that Theodore Kaczynski's *Surrogate Activities* and Thorstein Veblen's *Leisure Class* refer essentially to the same problem approached from two different perspectives, and that it is possible to form a synthesis of these seemingly disparate views. The line between leisure and satisfying labor is a very thin one. Many people currently engaged in labor are only in it for money, not for personal satisfaction or any material gain directly related to the work per se. Someone who hunts for their own sustenance and builds a log cabin in the woods for their own shelter, and derives satisfaction from the fact, is not in the same living situation as someone else who labors in a factory long enough that they can afford a temporary vacation to the wilderness. The former is the natural state of man. The latter is artifice.

The point seems almost commonsensical; people toil tirelessly at dead-end, thankless jobs for the vain hope of obtaining enough money that they will, eventually, no longer need to labor, and be free to hunt, or golf, or paint, or play the guitar, or sit in an easy chair reading books, or whatever else suits their fancy. However, living in a society with an economy with a debt-backed currency, where productivity and remuneration have become decoupled, has robbed us of this dream. Even now, many are begging for unconditional basic income to offset their lost wages and lost leisure time.

The result is a growing class divide, between what Michael Lind termed Hubs and Heartlands.

The new class war: did a liberal elite pave the way for rise of Trump?

> "Institutions that used to magnify the power of working-class people – trades unions, local political parties and religious congregations – have all dissolved for different reasons. By default, power has siphoned upwards in the culture, politics and the economy," he says.
>
> Without grassroots organisations, he argues, politicians are unlikely to get the policies right. In the place of those channels, he points out, we have telephone polls that inform social science studies or, he says, "they send someone from New York or Washington to the mysterious primitive heartland, to Ohio or Indiana, and interview the natives. Then you go back and write like a missionary."

Neoliberal technocrats and the professional-managerial class, as a group, attract animus from populists on both the Left and the Right, and with good reason. Never in human history has a group possessed so much power, money, and institutional support, along with the unshakable conviction that they are absolutely correct about all societal matters and that anyone outside their order is an ignorant bumpkin not worthy of consideration. The so-called urban professionals, as a group, have used their power to create what Joel Kotkin termed a new *clerisy*.

Neofeudalism and its new legitimisers

> With populist parties and movements gaining influence not only in North America but in Europe and Latin America as well, many have been predicting a new era of authoritarianism, such as portrayed by George Orwell in 1984 or by Margaret Atwood in The Handmaid's Tale. But the more likely model for future tyranny is Aldous Huxley's Brave

> New World, where the masters are not hoary Stalinoids or fanatical fundamentalists, but gentle, rational executives known as World Controllers.
>
> The Controllers preside over a World State composed of five biologically engineered social castes, from Alphas at the top to Epsilons at the bottom. Alphas take for granted their preeminence and their right to the labor of lower castes. People no longer have children, since humans are developed in vats. Families have been abolished, except in a few distant "savage reservations." Citizens of the World State live in amenity-rich dormitories and enjoy pleasurable pharmaceuticals and unconstrained sex without commitment or consequences. This family-free life is similar to how Mark Zuckerberg described his ideal Facebook employees: "We may not own a car. We may not have a family. Simplicity in life is what allows you to focus on what's important."
>
> Huxley's scenario eerily resembles what today's oligarchs favour: a society conditioned by technology and ruled by an elite with superior intelligence. The power of the Controllers in *Brave New World* resides mostly in their ability to mould cultural values: like those at the top of today's clerisy they suppress unacceptable ideas not by brute force but by characterising them as deplorable, risible, absurd, or even pornographic. Because their pronouncements are accepted as authoritative, they can run a thought-dictatorship far more subtle, and efficient, than that of Mussolini, Hitler, or Stalin.

In the past, religion and the priesthood occupied the position of ministering to the masses and imbuing in them the values of the State. Today, that position has been secularized and is now occupied by legions of so-called scientists, experts, and fact-checkers. Scientism is the new religion. Science denial, the new heresy. Twitter deplatforming and debanking, the new witch-burning. The enemy of the establishment is the "wild man"; rural and suburban denizens who bear a stronger allegiance to their own community and its unique values than to the wider establishment and its homogenizing and stultifying agendas.

Many working-class people in developed countries correctly sense that their living standards are declining. In the US, home ownership is becoming more difficult to attain. This is not an accident. Our financial system uses overvalued homes as a reservoir of value. The Elites of society would prefer it if we all lived in high-density housing and are pricing us out of the low-density housing market on purpose.

However, they also realize that – just as it stresses out chickens or cows when one stuffs them in cages situated atop one another, stewing in each other's excrement – city living is also immensely stressful for human beings, hence the need for countless technological, medical, and psychosocial interventions to make free men more comfortable with being reshaped into a disenfranchised slave caste, stripped of property rights and stuffed in a rented pod apartment, valued only for their ability to produce labor and consume frivolous trinkets and keep the giant pyramid scheme going for just a few years more, so the looter class can run off with even more money and consolidate their already immeasurable power.

Mind control is one such intervention.

For decades, researchers at prestigious universities and scientific institutions worldwide have sought the holy grail of man-machine interface technology; the so-called brain-computer interface, or,

informally, the “neural lace”. Those familiar with the writings of Iain Banks and Neal Stephenson have some familiarity with the concept, which features in their fictional works as a plot device.

Can coding the brain save or destroy us?

> Beyond the existential crisis of identity and experience, Stephenson’s novel spotlights one major risk if these companies succeed (which, by the way, they think will take decades of research). If there is a regular language of neurological signaling, and someone builds a protocol allowing for direct brain-computational connections, unauthorized manipulation of the brain becomes a serious risk. Viruses of the brain are no joke, and widespread adoption of brain-machine interfaces would inevitably lead to the kind of lax safety guidelines that now leave such intimate and important pieces of technology, such as baby monitors and cars, vulnerable to hackers.

What can one do with a BCI? The more pertinent question here is what *can’t* be done with one.

Neuralink and the Brain’s Magical Future

> To a scientist, to think about changing the fundamental nature of life—creating viruses, eugenics, etc.—it raises a specter that many biologists find quite worrisome, whereas the neuroscientists that I know, when they think about chips in the brain, it doesn’t seem that foreign, because we already have chips in the brain. We have deep brain stimulation to alleviate the symptoms of Parkinson’s Disease, we have early trials of chips to restore vision, we have the cochlear implant—so to us it doesn’t seem like that big of a stretch to put devices into a brain to read information out and to read information back in.

For many, the concept of the neural lace remains an esoteric flight of fancy. Something spoken of in passing, and not anything that could ever become commonplace in society.

But how true is that, really?

Project MKULTRA

Long a topic of frenzied speculation, it is now known definitively through declassified documents that throughout the 1950s and beyond, the US Central Intelligence Agency was engaged in a program of illegal and unethical human experimentation to modify people’s behavior with drugs, hypnosis, and verbal and sexual abuse.

This was not one small program conducted in a single laboratory. It was an extensive program with broad reach.

CIA MKULTRA / Mind Control Collection

> Project MKUltra—sometimes referred to as the CIA’s mind control program—was the code

> name given to an illegal program of experiments on human subjects, designed and undertaken by the United States Central Intelligence Agency (CIA). Experiments on humans were intended to identify and develop drugs, alcohol, stick and poke tattoos, and procedures to be used in interrogations and torture, in order to weaken the individual to force confessions through mind control. Organized through the Scientific Intelligence Division of the CIA, the project coordinated with the Special Operations Division of the U.S. Army's Chemical Corps. The program began in the early 1950s, was officially sanctioned in 1953, was reduced in scope in 1964, further curtailed in 1967 and officially halted in 1973. The program engaged in many illegal activities; in particular it used unwitting U.S. and Canadian citizens as its test subjects, which led to controversy regarding its legitimacy. MKUltra used numerous methodologies to manipulate people's mental states and alter brain functions, including the surreptitious administration of drugs (especially LSD) and other chemicals, hypnosis, sensory deprivation, isolation, verbal and sexual abuse, as well as various forms of torture.
>
> The scope of Project MKUltra was broad, with research undertaken at 80 institutions, including 44 colleges and universities, as well as hospitals, prisons, and pharmaceutical companies. The CIA operated through these institutions using front organizations, although sometimes top officials at these institutions were aware of the CIA's involvement.

One sub-project of the MKULTRA program was known as Operation Midnight Climax. The CIA used sex workers in brothels as assets, having them dose unwitting Johns with LSD and examining the effects.

1953–1964: Operation Midnight Climax — CIA's lurid ventures into sex, hookers and LSD

> The walls of CIA's bordellos were decorated with photos of women in bondage and other suggestive sexual images. White had unrestricted use of surveillance technology; LSD and other mind-altering substances were slipped into the johns' liquor by the hookers, and their sexual encounters were monitored and recorded from behind two-way mirrors. These taped sexual encounters were useful for blackmailing johns — some of who were prominent upstanding citizens.
>
> White would watch the drugged sex while sipping martinis; to maintain his Jekyll-and-Hyde routine he reportedly relied heavily on alcohol and drugs. (Lee and Shlain. *Acid Dreams*, 1992; Cockburn and St. Clair Whiteout, 1998; *San Francisco Weekly*, 2012) "The agency, *TIME Magazine* noted, "appeared to be experiencing its own form of madness." (2012)

In other tests, subjects were exposed to heinous abuse without agreeing to any of it. There was no informed consent in any of these experiments. If our government was willing to ignore the informed consent requirements of the Nuremberg Code once, what's to keep them from doing it again? As you will find, the answer to that question is *vanishingly little*.

Bull Experiments

Back in the 1960s, a little-known scientist from Spain by the name of José Manuel Rodríguez Delgado

inserted his electrodes into the brains of bulls and conducted experiments where he stood in front of charging bulls and used a pushbutton radio transmitter to activate the electrodes and bring the bulls to a halt. What he claimed was that he'd developed a technique whereby an animal's aggressive impulses could be neutralized remotely.

Tribute to Jose Delgado, Legendary and Slightly Scary Pioneer of Mind Control

> Once among the world's most acclaimed scientists, Jose Manuel Rodriguez Delgado has become an urban legend, whose career is shrouded in misinformation. Delgado pioneered that most unnerving of technologies, the brain chip, which manipulates the mind by electrically stimulating neural tissue with implanted electrodes. Long a McGuffin of science fictions, from *The Terminal Man* to *The Matrix*, brain chips are now being tested as treatments for epilepsy, Parkinson's disease, paralysis, depression, and other disorders.
>
> In part because it was relatively unencumbered by ethical regulations, Delgado's research rivaled and even surpassed much of what is being done today. In 1965, *The New York Times* reported on its front page that he had stopped a charging bull in its tracks by sending a radio signal to a device implanted in its brain. He also implanted radio-equipped electrode arrays, which he called "stimoceivers," in dogs, cats, monkeys, chimpanzees, gibbons, and humans. With the push of a button, he could evoke smiles, snarls, bliss, terror, hunger, garrulousness, lust, and other responses.

In 1969, Dr. Delgado published a book entitled *Physical Control of the Mind: Toward a Psychocivilized Society*. This book can be borrowed from the Internet Archive, should one wish to read it.

Physical Control of the Mind: Toward a Psychocivilized Society

José Delgado did not believe that human beings deserved agency, or the privacy of our own thoughts. He asserted that when left to our own devices, we were given to crime, sloth, and vice, and that correcting this condition by direct alteration of brain states in large masses of people and thus achieving a hyper-civilized society was the job of science.

To quote Dr. Delgado:

> "Man does not have the right to develop his own mind. This kind of liberal orientation has great appeal. We must electrically control the brain. Some day armies and generals will be controlled by electrical stimulation of the brain."

We at ICENI happen to disagree.

Wireless, No-Touch Techniques

For the past several decades, numerous people have come forward with strange symptoms, claiming to be "Targeted Individuals", the subject of clandestine experiments with remote mind control technology. Many of these cases have been dismissed as a result of paranoid delusions brought on by

mental illness. However, the technology to do many of the things that they have described actually does exist, and the patents are available for anyone to read.

US5289438A – Method and system for altering consciousness

A system for altering the states of human consciousness involves the simultaneous application of multiple stimuli, preferable sounds, having differing frequencies and wave forms. The relationship between the frequencies of the several stimuli is exhibited by the equation

g=2.sup.n/4 ·f

where:

f=frequency of one stimulus;

g=frequency of the other stimuli or stimulus; and

n=a positive or negative integer which is different for each other stimulus.

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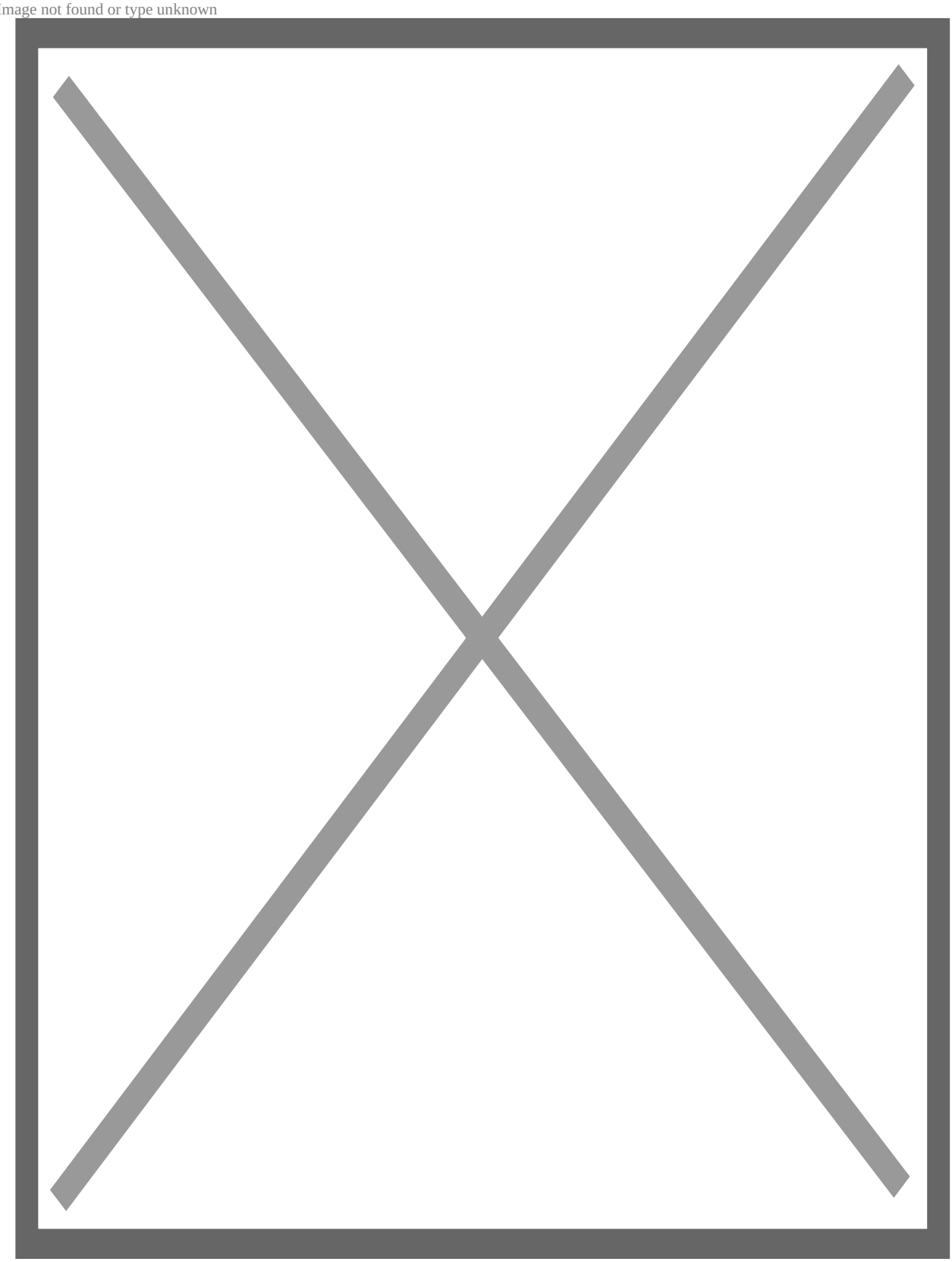

US6488617B1 – Method and device for producing a desired brain state

A method and device for the production of a desired brain state in an individual contain means for monitoring and analyzing the brain state while a set of one or more magnets produce fields that alter this state. A computational system alters various parameters of the magnetic fields in order to close the gap between the actual and desired brain state. This feedback process operates continuously until the gap is minimized and/or removed.

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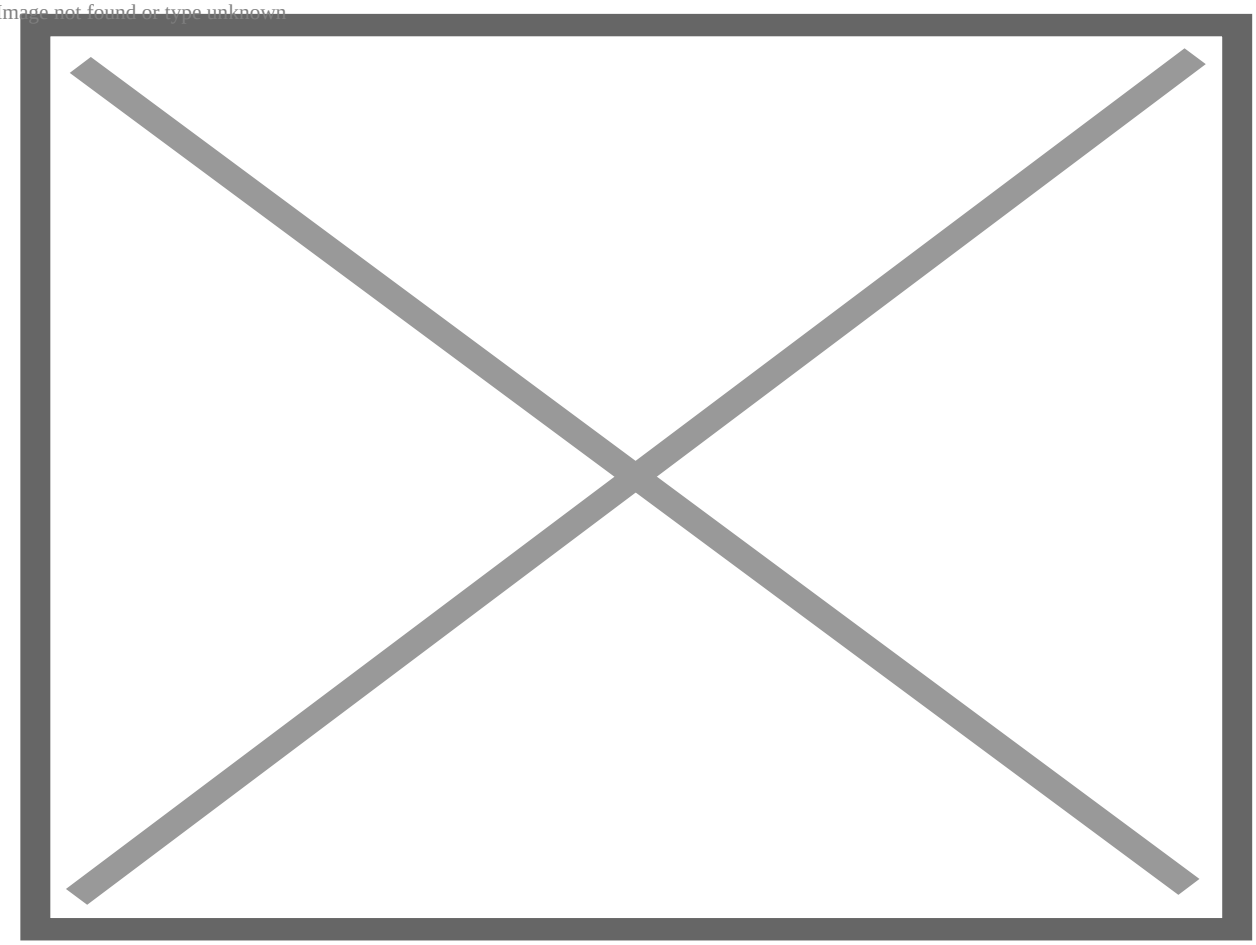

With these types of experiments, the deniability is built right in. There is no way to differentiate between someone who has been attacked with one of these devices, and someone who is suffering from purely psychogenic auditory hallucinations.

The Utah Array

In the 1990s, the miniaturization of brain electrodes had progressed to the point where microelectrode arrays such as the Utah Array started to be used in brain-machine interface experiments.

This was a major step forward. Subjects implanted with Utah Arrays have demonstrated the ability to control computer cursors and robot arms with their minds, among other feats.

Implantable Neural Probes for Brain-Machine Interfaces ? Current Developments and Future Prospects

The Utah array and its recording systems have been approved for clinical applications by the United States Food and Drug Administration (FDA). Several clinical trials of Utah array-based BMI systems involving human patients have been conducted. Simeral et al. reported that one patient with tetraplegia could control a computer cursor (including point-and-click functions) based on neural signals from the motor cortex [45]. Pandarinath et al. analyzed neural population dynamics during movement in two patients with amyotrophic lateral sclerosis (ALS) as they attempted to use their finger to move a computer cursor [46]. One year after implantation, the system still produced adequate signals for neural cursor control (Fig. 3D) [47] or virtual typing [48]. A more challenging task was performed by a human subject with Utah array implantation. Wodlinger et al. developed a BMI system for the control of an anthropomorphic robot arm and hand with 10 degrees of freedom [49].

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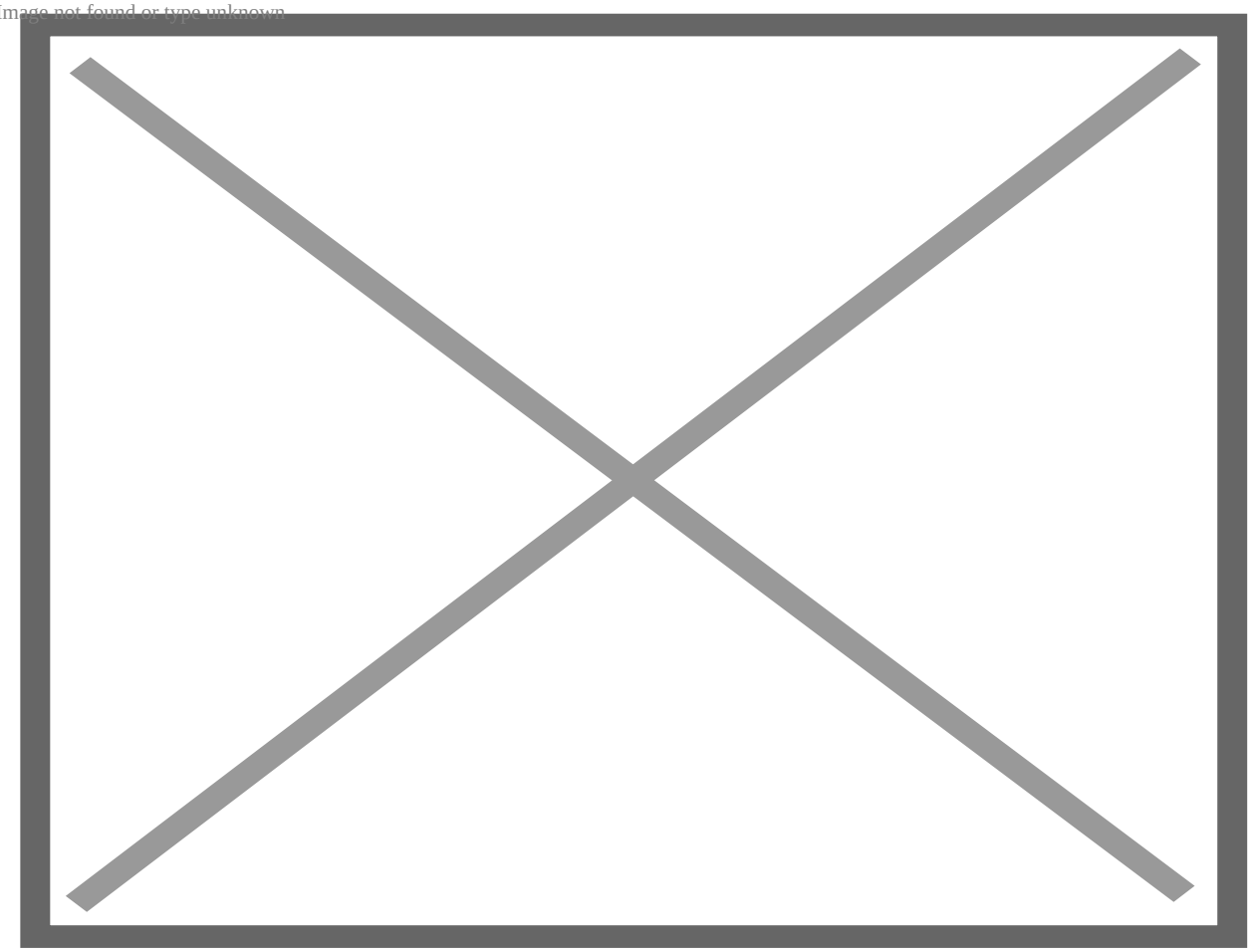

However, microelectrode arrays have numerous weaknesses. They require a craniotomy. A patch of skull must be removed and the meninges peeled back, compromising the sterile microbiome of the brain and potentially leading to meningitis, hemorrhage, and other complications. Microelectrode arrays are also very stiff, and the brain is very squishy. The difference in elasticity between the two materials can lead to mechanical injury of implanted brain tissue and subsequent implant failure.

Imagine a chopstick shoved into Jell-O and what would happen if this chopstick/Jell-O arrangement was shaken around violently. The chopstick would dig a cavity into the gelatin. Microelectrodes would do the same thing to one's brain if someone implanted with one got in a car accident, for instance.

Also, over time, implants become fouled with glial scar tissue, potentially impeding their electrical fidelity.

Decades and billions of dollars have been spent on trying to come up with flexible, biocompatible electrodes that solve all of these problems, such as electrodes made of PEDOT:PSS, to no avail. It may be that microelectrode technology is a dead-end in the search for workable BCI tech.

Optogenetics and Magnetogenetics

One approach to experimental stimulation of nervous systems is to genetically sensitize nervous tissue to light and electromagnetic fields. Optogenetics is a technique that has been used in tissue cultures and mouse experiments in laboratory settings for over a decade. The method is deceptively simple; transgenic animal tissue is given genes that code for light-sensitive proteins, and then fiber optics pipe laser light into this tissue to stimulate a response.

Nature – Laser used to control mouse's brain — and speed up milkshake consumption

> Neuroscientists at Stanford University in California conducted their experiments on mice that were genetically engineered to have light-sensitive neurons in a brain region called the orbitofrontal cortex. That area is involved in perceiving, and reacting to, rewards. By shining a laser at specific neurons, the researchers increased the pace at which the mice consumed a high-calorie milkshake. The results, reported on 12 November at the annual meeting of the Society for Neuroscience in San Diego, California, illustrate for the first time that the technique, known as optogenetics, can control behaviour by activating a sequence of individual cells.

Other techniques include the so-called "Magneto" protein, which attaches ferritin to membrane-bound ionic gateways to allow them to be stimulated with electromagnetic fields.

Genetically engineered 'Magneto' protein remotely controls brain and behaviour

> The new technique builds on this earlier work, and is based on a protein called TRPV4, which is sensitive to both temperature and stretching forces. These stimuli open its central

> pore, allowing electrical current to flow through the cell membrane; this evokes nervous impulses that travel into the spinal cord and then up to the brain.
>
> Güler and his colleagues reasoned that magnetic torque (or rotating) forces might activate TRPV4 by tugging open its central pore, and so they used genetic engineering to fuse the protein to the paramagnetic region of ferritin, together with short DNA sequences that signal cells to transport proteins to the nerve cell membrane and insert them into it.

Nature – Genetically targeted magnetic control of the nervous system

> Optogenetic and chemogenetic actuators are critical for deconstructing the neural correlates of behavior. However, these tools have several limitations, including invasive modes of stimulation or slow on/off kinetics. We have overcome these disadvantages by synthesizing a single-component, magnetically sensitive actuator, “Magneto,” comprising the cation channel TRPV4 fused to the paramagnetic protein ferritin. We validated noninvasive magnetic control over neuronal activity by demonstrating remote stimulation of cells using *in vitro* calcium imaging assays, electrophysiological recordings in brain slices, *in vivo* electrophysiological recordings in the brains of freely moving mice, and behavioral outputs in zebrafish and mice. As proof of concept, we used Magneto to delineate a causal role of striatal dopamine receptor 1 neurons in mediating reward behavior in mice. Together our results present Magneto as an actuator capable of remotely controlling circuits associated with complex animal behaviors.

However, this approach has met with setbacks:

Two Studies Fail to Replicate Magnetogenetics Research

> Several recent studies in high-profile journals reported to have genetically engineered neurons to become responsive to magnetic fields. In doing so, the authors could remotely control the activity of particular neurons in the brain, and even animal behavior—promising huge advances in neuroscientific research and speculation for applications even in medicine. “We envision a new age of magnetogenetics is coming,” one 2015 study read.
>
> But now, two independent teams of scientists bring those results into question. In studies recently posted as preprints to *bioRxiv,* the researchers couldn’t replicate those earlier findings.

Nevertheless, techniques such as these may be used as a component in brain-computer interfaces, however, they require genetic engineering, which can be very inefficient in adult organisms.

Gene therapy is like changing the blueprints to a house that’s already been built. If you’re reading this, you’re an organism of fairly advanced maturity, yourself. Your genes have been expressed continuously since your birth, and your tissues are representative of those genes.

Neurons in the CNS have very, very low turnover in adults. Even with advances in things like CRISPR/Cas9 and gene delivery and transfection into the cells of living organisms using nanotech and viral vectors, genetic engineering of humans to make nervous tissue *fully* receptive to external stimuli

would likely require germline edits or in-utero gene therapy, before the tissues have differentiated into clusters of specialized cells.

For everyone else, it would be necessary to find methods to stimulate nervous tissue as it already exists.

Neuralink

Elon Musk's ambitious plan to make BCIs commonplace came under fire recently when it was claimed that monkeys used in the experiments they were conducting were mistreated, and that some of them even died from complications.

In August 2020, after years of making lofty promises, Neuralink wowed the world with their livestreamed pig demonstrations.

Neuralink is, to put it bluntly, microelectrode array technology on steroids. It is little more than an iterative update of a decades-old technology. The current Neuralink device is a disk-shaped micro-computer with guts similar to a smartphone, featuring a battery pack, induction charging coil, a CPU, a neural encoder/decoder system with multiple channels, and a Bluetooth link, with a microelectrode array hanging off the end.

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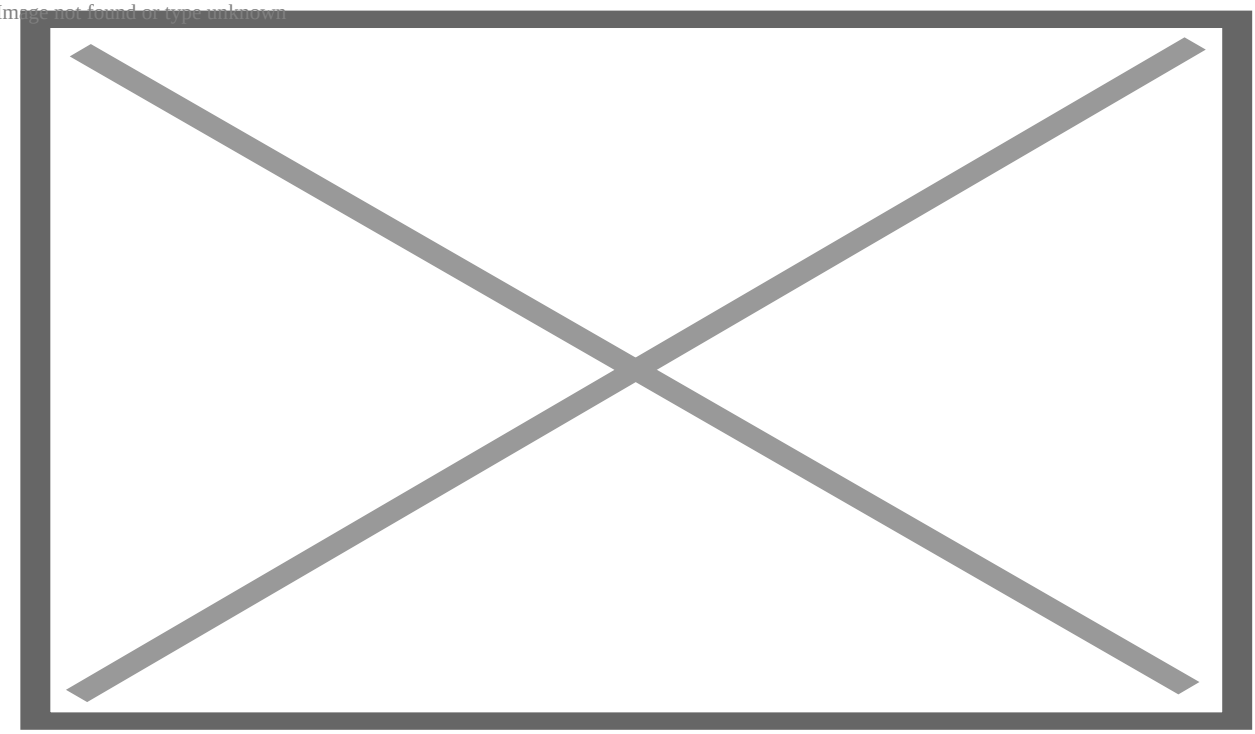

The way it is implanted is fairly straightforward. First, a flap of the scalp is resected and a craniotomy is performed, cutting away a disc-shaped section of skull equal in size and shape to the Link device itself. Then, after peeling back the meninges, a very fine flexible microelectrode array is stitched into the brain by a robot. Lastly, the link device itself is implanted into the skull, replacing the section of bone

removed by the craniotomy, and the scalp flap is lowered back into place and allowed to heal over. To all outward appearances, the subject appears identical before and after, with no obvious signs of the implant's presence. Charging the device would presumably be accomplished through the use of a magnetic puck on the subject's head, much like an Apple Watch charger.

This is extremely invasive. The process actually destroys a miniscule amount of brain tissue in the path of the electrodes.

There has to be a "better" way of doing this, and there is. Very few people realize this, but microelectrode array technology is already obsolete.

Charles Lieber

Charles Lieber is an expert in bionanotechnology at Harvard, where he has experimented with silicon nanowires since the late 1990s.

Silicon nanowires (or SiNWs) are extremely tiny wires produced by chemically etching or laser-ablating silicon.

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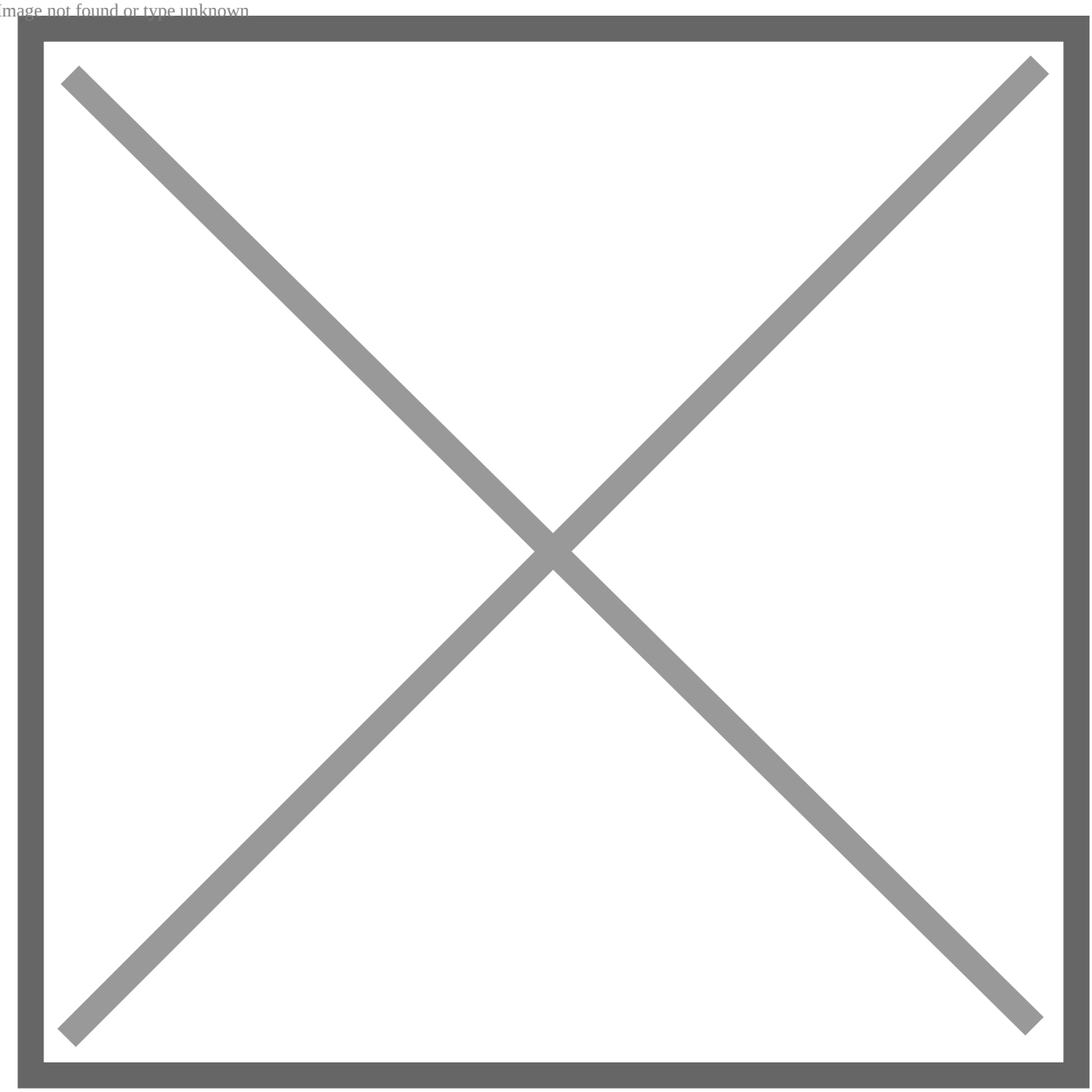

One potential application for silicon nanowires that Charles Lieber proposed in his work was using them as a replacement for patch clamp electrodes. Traditional methods of recording electrical activity in living cells can be quite damaging to those cells, and silicon nanowires are just small enough that, when coated with TAT or a lipid layer, they can slip through cell membranes without damaging them and theoretically be used as nano-scale biosensors to monitor cellular activity.

Spontaneous Internalization of Cell Penetrating Peptide-Modified Nanowires into Primary Neurons

> Semiconductor nanowire (NW) devices that can address intracellular electrophysiological events with high sensitivity and spatial resolution are emerging as key tools in nanobioelectronics. Intracellular delivery of NWs without compromising cellular integrity and metabolic activity has, however, proven difficult without external mechanical forces or

electrical pulses. Here, we introduce a biomimetic approach in which a cell penetrating peptide, the trans-activating transcriptional activator (TAT) from human immunodeficiency virus 1, is linked to the surface of Si NWs to facilitate spontaneous internalization of NWs into primary neuronal cells. Confocal microscopy imaging studies at fixed time points demonstrate that TAT-conjugated NWs (TAT-NWs) are fully internalized into mouse hippocampal neurons, and quantitative image analyses reveal an ca. 15% internalization efficiency. In addition, live cell dynamic imaging of NW internalization shows that NW penetration begins within 10–20 min after binding to the membrane and that NWs become fully internalized within 30–40 min. The generality of cell penetrating peptide modification method is further demonstrated by internalization of TAT-NWs into primary dorsal root ganglion (DRG) neurons.

Virus-Sized Transistors

IMAGINE BEING ABLE to signal an immune cell to generate antibodies that would fight bacteria or even cancer. That fictional possibility is now a step closer to reality with the development of a bio-compatible transistor the size of a virus. Hyman professor of chemistry Charles Lieber and his colleagues used nanowires to create a transistor so small that it can be used to enter and probe cells without disrupting the intracellular machinery. These nanoscale semiconductor switches could even be used to enable two-way communication with individual cells.

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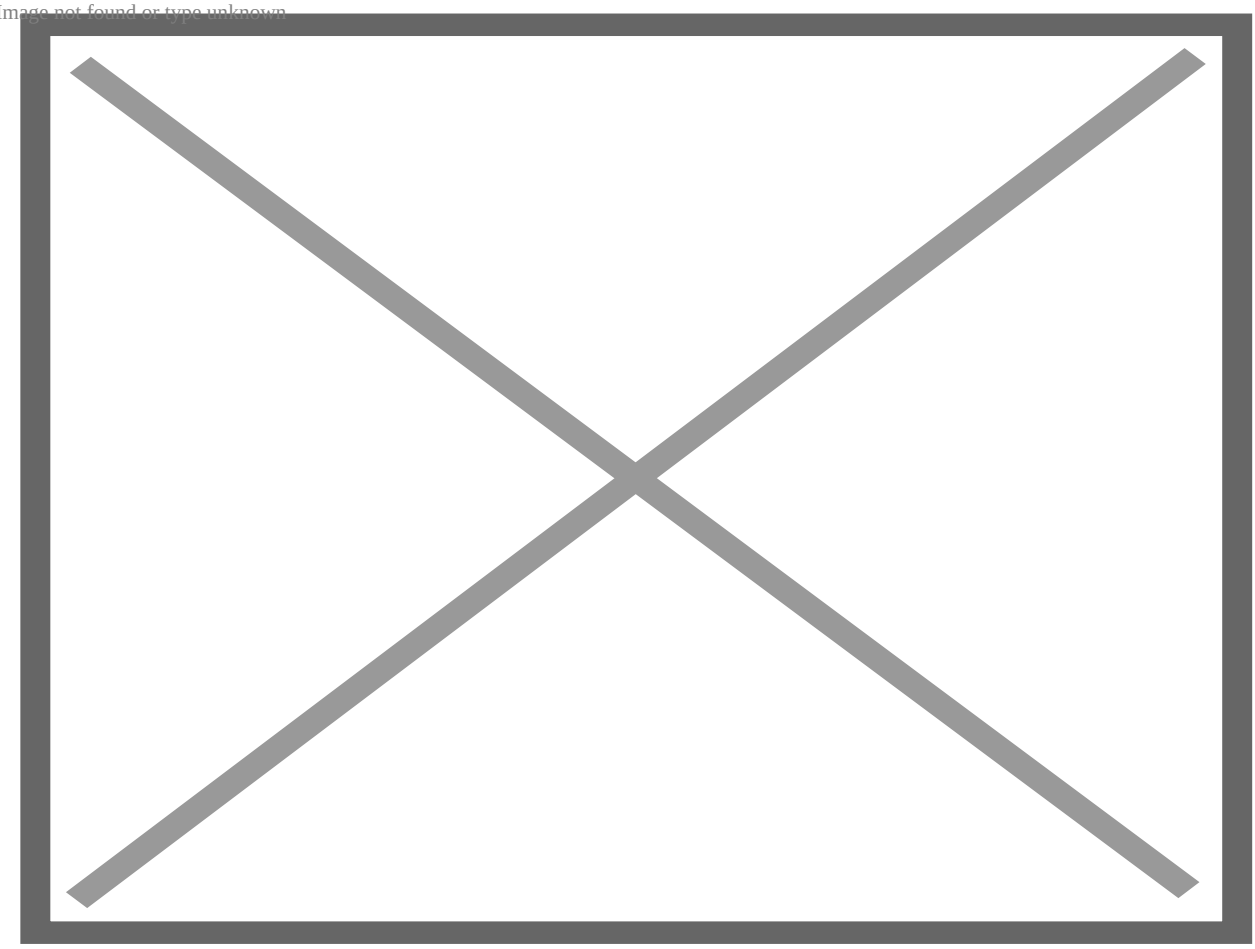

Bionanotechnology and synthetic biology are two areas of research with complementary, interpenetrating objectives. On the one hand, you have synthetic biology, which can be used to make biology more receptive to nanotech, and on the other hand, you have nanotechnology which largely consists of non-living, artificial nano-scale devices.

The combination of nanotech and biology to create new, compound organisms that are blends of synthetic elements and living tissue is an area of much ongoing research. Some of the proposed applications include medical diagnostics, but also the typical slate of Kurzweilian life-extensionist propositions, including genome restoration and reversing aging processes.

Nanotech could make humans immortal by 2040, futurist says

> In an interview with *Computerworld*, author and futurist Ray Kurzweil said that anyone alive come 2040 or 2050 could be close to immortal. The quickening advance of nanotechnology means that the human condition will shift into more of a collaboration of man and machine, as nanobots flow through human blood streams and eventually even replace biological blood, he added.
>
> That may sound like something out of a sci-fi movie, but Kurzweil, a member of the Inventor's Hall of Fame and a recipient of the National Medal of Technology, says that

> research well underway today is leading to a time when a combination of nanotechnology and biotechnology will wipe out cancer, Alzheimer's disease, obesity and diabetes.

In a way, living cells are perfect models of nanotechnology, and science has long sought ways to imitate them, including the construction of artificial cells, artificial proteins, and so on. Much of this work is in its infancy, and gene/protein design as a concept is something that eludes even the most brilliant of researchers simply due to the stunning complexity of biological systems. However, with rapid advances in computational modeling, even those barriers are being lowered out of the way.

Some fear, and rightly so, that synthetic biology could represent an existential threat to our species. Without a doubt, self-replicating systems and their behavior can be difficult to predict. Something that seems innocuous enough on paper could end up behaving like a pathogen in reality.

Imagine if a lab produced a synthetic bacterium that gobbles up plant matter lightning-fast, and it happened to escape. Imagine entire crops moldering over and turning black in a matter of weeks. The military tries hitting farmland with napalm and then nukes to stop it, but they can't. It's too late. It's everywhere. We just wiped out all the world's vegetation, and with it, the food chain that feeds us. Billions starve. That's just one somewhat hyperbolic and fanciful example, but the threat of something similar happening is very real.

Charles Lieber's research into silicon nanowires is extensive, and also includes investigating their applications in brain-computer interfaces.

Lieber Research Group – Brain Science

> The Lieber group has a large program focused on a conceptually novel approach for integrating electronics within the brain and other areas of the nervous system, which involves the development of neural network-like mesh electronics and a noninvasive delivery method into targeted distinct brain regions via syringe-injection. We are actively exploiting this new paradigm for tackling fundamental questions in cognitive and behavioral neuroscience, and as a powerful new approach for treatment of neurological and neurodegenerative diseases, traumatic brain and spinal cord injury, and ultimately enhancing human performance via brain-machine interface.

Charles Lieber's sponsors included the Office of Naval Research, the Defense Advanced Research Projects Agency, the Air Force Office of Scientific Research, the National Institutes of Health, and the Mitre Corporation (commonly stylized as MITRE, even though it isn't an acronym for anything). In other words, he had significant funding from the Pentagon.

That's why he was indicted by the DOJ for fraud (and, more recently, convicted) when they found out that he was double-dipping and taking money from China against the exclusivity terms of his DOD grants, and not declaring any of it to the IRS.

Harvard University Professor and Two Chinese Nationals Charged in Three Separate China Related Cases

> According to court documents, since 2008, Dr. Lieber who has served as the Principal

> Investigator of the Lieber Research Group at Harvard University, which specialized in the area of nanoscience, has received more than $15,000,000 in grant funding from the National Institutes of Health (NIH) and Department of Defense (DOD). These grants require the disclosure of significant foreign financial conflicts of interest, including financial support from foreign governments or foreign entities. Unbeknownst to Harvard University beginning in 2011, Lieber became a "Strategic Scientist" at Wuhan University of Technology (WUT) in China and was a contractual participant in China's Thousand Talents Plan from in or about 2012 to 2017. China's Thousand Talents Plan is one of the most prominent Chinese Talent recruit plans that are designed to attract, recruit, and cultivate high-level scientific talent in furtherance of China's scientific development, economic prosperity and national security. These talent programs seek to lure Chinese overseas talent and foreign experts to bring their knowledge and experience to China and reward individuals for stealing proprietary information. Under the terms of Lieber's three-year Thousand Talents contract, WUT paid Lieber $50,000 USD per month, living expenses of up to 1,000,000 Chinese Yuan (approximately $158,000 USD at the time) and awarded him more than $1.5 million to establish a research lab at WUT. In return, Lieber was obligated to work for WUT "not less than nine months a year" by "declaring international cooperation projects, cultivating young teachers and Ph.D. students, organizing international conference[s], applying for patents and publishing articles in the name of" WUT.

Charles Lieber was allegedly working on silicon nanowire batteries in China, but no one can recall him ever working on batteries.

Why did a Chinese university hire Charles Lieber to do battery research?

> Officials at WUT have not responded to requests for comment on their agreement with Lieber. But it outlines just the kind of high-tech work that U.S. prosecutors involved in efforts to investigate Chinese attempts to acquire advanced technology from U.S.-based researchers say they are concerned about. They allege that the Chinese government has used such collaborations to improperly take advantage of the federally funded research enterprise, and gain an edge in economic and military advances.
>
> In Lieber's case, however, the battery angle poses a puzzle. That's because a search of the titles of Lieber's more than 400 papers and more than 75 U.S. and Chinese patents reveals no mentions of "battery," "batteries," "vehicle," or "vehicles." (According to Lieber's CV, through 2019 he has co-authored 412 research papers and has 65 awarded and pending U.S. patents. The website of the Chinese National Intellectual Property Administration indicates that Lieber has been awarded 11 Chinese patents.)
>
> In fact, one U.S. nanoscientist and former student of Lieber's says: "I have never seen Charlie working on batteries or nanowire batteries." (The scientist asked that their name not be used because of the sensitivity surrounding Lieber's case.)

Instead, he was working on things like this:

Nanowire probes could drive high-resolution brain-machine interfaces

> Brain-machine interfaces (BMIs) can serve as bidirectional connections that output electrical signals of brain activity or input electrical stimuli to modulate brain activity in concert with external machines, including computer processors and prosthetics, for human enhancement[1,2]. Reading electrical activity from neurons is the foundation of many BMI applications, such as brain mapping, that aims to understand brain functions by decoding the communication between neurons. Reading and processing this activity is also key to neural prosthetics in which brain activity is used to control devices such as artificial limbs. For these BMI applications, most of the in vivo recording tools used today read extracellular neural activity by detecting suprathreshold action potential signals that 'leak' outside of neurons (Fig. 1a (i)), while critical subthreshold events, such as synaptic potentials and dendritic integration, remain hidden [3]. To achieve the most information-rich readings, which could provide more detailed mapping of brain function and the finest control of neural prosthetics, electronic devices need to provide access to intracellular signals from multiple neurons comprising the neuronal circuits and networks of the brain.

Why is this suspicious? Well, for one thing, Charles Lieber was doing work for the Wuhan University of Technology, in the same city that hosts the Wuhan Institute of Virology.

For another, he's a colleague of Robert Langer, one of the MIT bigwigs at Moderna, and they've co-written papers together.

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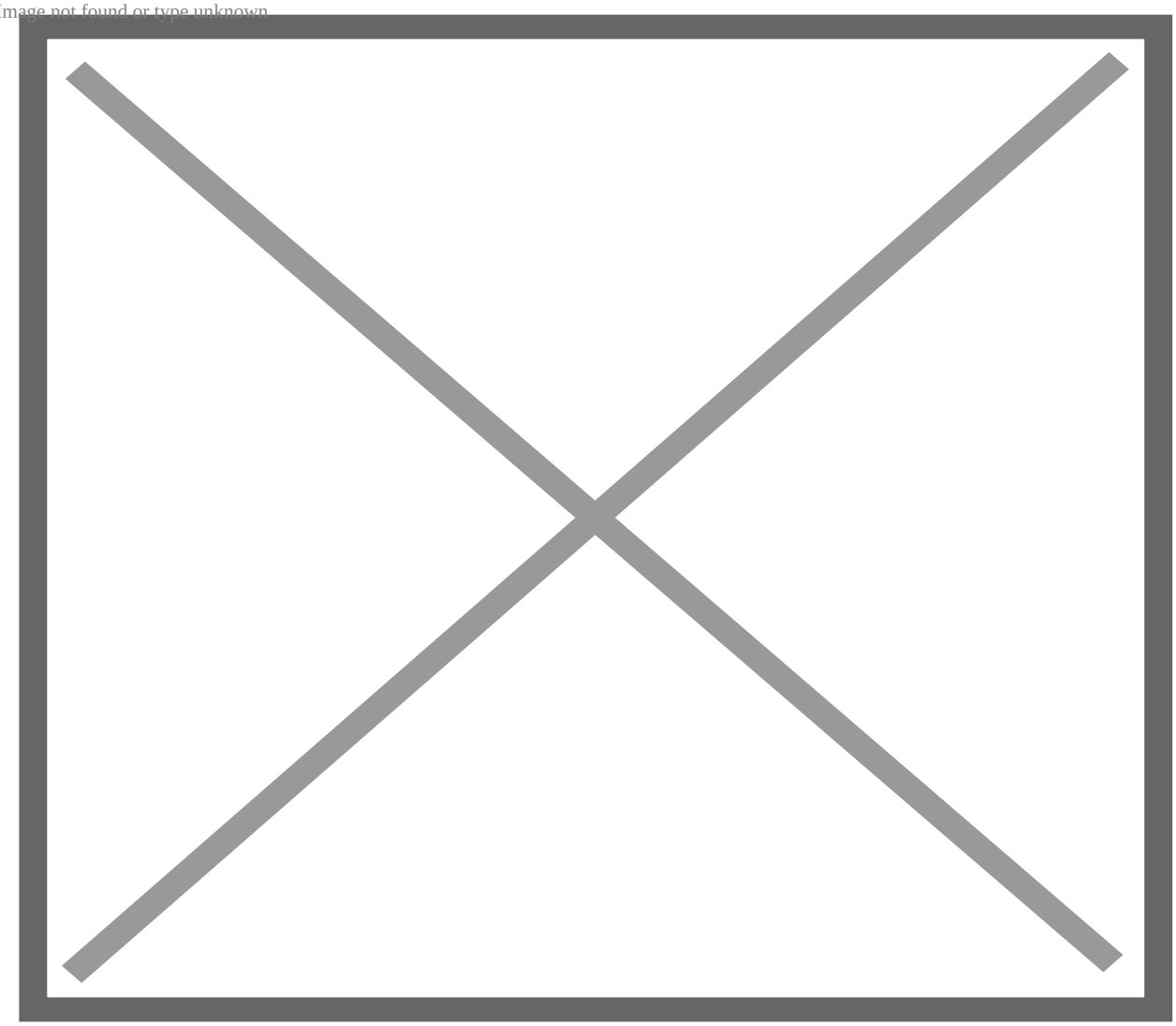

They’ve got the beat

> “What makes this so special is that there are little sensors built into this tissue, so you can monitor the performance of what you created,” explains Robert Langer, the Massachusetts Institute of Technology professor who envisions this latest discovery being used to create an artificial heart. “It’s a long way off, but it’s a real possibility,” he said.
>
> Harvard University chemist Charles Lieber compared the breakthrough to a desktop computer, which uses special software to fix problems automatically and extend the life of the computer chip.
>
> “We’ve brought the basics of what is inside your computer and put it inside synthetic tissue,” Lieber said.

In fact, Robert Langer expressed shock that Charles Lieber was arrested:

Harvard scientist's arrest stuns colleague

> Robert Langer, a chemical engineer at MIT and a prolific inventor and entrepreneur, said Tuesday that he knows Lieber and was startled by the news.
>
> "I've always thought of him as an outstanding scientist," Langer said in an email. "I've had some of his former students in my lab a number of years ago, and we collaborated a bit a number of years ago."
>
> Lieber, 60, helped pioneer the placement of nanowires that could go into a tissue-engineered heart and sense how the organ is functioning, Langer said. Since the 1960s, scientists have struggled to develop working artificial hearts — first mechanical ones and more recently a living organ manufactured for transplantation in people with severe cardiac disease.

So, not only is Charles Lieber linked to DARPA, and to Wuhan, he's also linked to one of the top researchers at Moderna: Robert Langer, who is an expert in nanotech drug delivery.

Both Robert Langer and Charles Lieber's papers describe technologies that could be utilized to "upgrade" people with bionics, from artificial tissue scaffolds, to biosensors and more.

MIT – Langer Lab – Publications

Harvard – Lieber Research Group – Publications

These are some very odd coincidences.

The BRAIN Initiative and N3 Nanotransducers

In 2014, DARPA began the BRAIN Initiative (short for Brain Research through Advancing Innovative Neurotechnologies) to study every aspect of the human brain, including performing BCI research.

Many of the files regarding this program and its sub-programs are publicly available on DARPA's website.

DARPA and the Brain Initiative

One component of the BRAIN Initiative is something called N3, or Next-generation Nonsurgical Neurotechnology. The grant proposal for N3 can be reviewed here:

DARPA N3 Grant Paperwork

> The high-resolution neural interfaces available today require a craniotomy for direct placement into the brain. The burden of surgery and associated risks are currently too high for this approach to be considered for use by able-bodied individuals. The N3 program aims

> to overcome these issues by developing a nonsurgical neural interface that is safe for human use, and that has high spatiotemporal resolution and low latency to enable function on par with current microelectrode technology. The interface must be bidirectional and will integrate technology for both neural recording (read out) and neural stimulation (write in). The developed technology must be agnostic to the interfaced DoD-relevant system.

In short, they want a wireless BCI that doesn't require a craniotomy (that is, cutting away chunks of the skull to stuff electrodes into the brain, which, again, is highly invasive and harmful).

Additionally, the technology must be delivered in a minimally invasive manner:

> TA2 involves the development of a system that includes a nanotransducer placed on or near neurons of interest and an integrated sensor/stimulator device that sits outside the skin. The nanotransducer may include technologies such as, but not limited to, self-assembled/molecular/biomolecular/chemical nanoparticles, or viral vectors. These nanotransducers must be delivered in a minutely invasive (nonsurgical) manner, which may include ingestion, injection, or nasal administration, and involve technology that includes self-assembly inside the body. While the major TA2 goals of developing neural read out and write in capabilities are similar to the goals from TA1, creating a nanotransducer with an optimal delivery route to the brain is a major additional component. Another major component of TA2 is achieving cell-type specificity. Proposers may choose which cell types they plan to target but must justify their decision. Furthermore, due to the proximity of the nanotransducer to the neuron, the metrics for TA2 are stricter, requiring single neuron spatial resolution and a higher number of control and sensory signals as outlined in Table 2.

It goes without saying that ingestion, injection, and/or nasal administration are pathways that allow for nanotransducers to be administered to unsuspecting people.

DARPA state that this technology will be used in a benevolent manner:

Nonsurgical Neural Interfaces Could Significantly Expand Use of Neurotechnology

> Over the past two decades, the international biomedical research community has demonstrated increasingly sophisticated ways to allow a person's brain to communicate with a device, allowing breakthroughs aimed at improving quality of life, such as access to computers and the internet, and more recently control of a prosthetic limb. DARPA has been at the forefront of this research.

However, BCIs with this sort of fine-grained, two-way monitoring and control of neural activity could be used to alter mood and cognitive states, robbing people of agency.

Ethical aspects of brain computer interfaces: a scoping review

> The concept of autonomy is overarching, and thus has implications for other key ethical themes including responsibility, informed consent, and privacy. However, it is also a central issue in and of itself, and is used across clinical and ethical discussions. We note that the

term is used differently by ethicists than by engineers and neuroscientists.Footnote4 For ethicists, autonomy refers to an individual's capacity to self-determine. In the context of BCIs, Glannon states that "nothing about the influence of neuromodulation on the brain and mind suggests that we should revise the concept of autonomy" in ethics; however, he also questions whether an action that is produced mostly or solely by a device can truly be attributed to a human [32]. He notes that, for example, if a BCI device has a causal role in decision making of the individual, this could negatively affect autonomy. To the same effect, the device may work too well: perhaps our normal system of brain to muscles to action has some inherent censoring properties, whereas BCI takes signal input directly from the brain and could result in inappropriate actions that would normally be considered but not actually executed [26]. Similarly, Vlek et al. found that the illusion of agency, where BCI users inaccurately claim to be the agent of action, is possible [44]. Overall, many but not all authors are concerned about possible side effects of BCI use on autonomy.

Wired Emotions: Ethical Issues of Affective Brain–Computer Interfaces

Technologies like affective BCIs allow for the manipulation of affective processes of humans. This intervention could infringe on the mental integrity of people. Mental integrity is the capacity of persons to have control over their mental states and brain data. This control entails that without consent nobody can monitor or manipulate these mental states or brain data (Lavazza 2018). Based on the ever-increasing technical ability to intervene in mental processes and the possible threat to mental integrity and cognitive liberty, some authors have argued for a legal protection of the mental realm (Bublitz and Merkel 2014). Future research should consider in more detail the potential implications of affective BCIs for mental integrity and cognitive liberty. Please note here that matters of cognitive liberty and mental integrity also apply for more direct forms of intervention in affective states, that are addressed in the next section.

Six teams were selected for this work, each with their own unique engineering approaches to the problem:

Six Paths to the Nonsurgical Future of Brain-Machine Interfaces

The Battelle team, under principal investigator Dr. Gaurav Sharma, aims to develop a minutely invasive interface system that pairs an external transceiver with electromagnetic nanotransducers that are nonsurgically delivered to neurons of interest. The nanotransducers would convert electrical signals from the neurons into magnetic signals that can be recorded and processed by the external transceiver, and vice versa, to enable bidirectional communication.

The Carnegie Mellon University team, under principal investigator Dr. Pulkit Grover, aims to develop a completely noninvasive device that uses an acousto-optical approach to record from the brain and interfering electrical fields to write to specific neurons. The team will use ultrasound waves to guide light into and out of the brain to detect neural activity. The team's write approach exploits the non-linear response of neurons to electric fields to enable

localized stimulation of specific cell types.

The Johns Hopkins University Applied Physics Laboratory team, under principal investigator Dr. David Blodgett, aims to develop a completely noninvasive, coherent optical system for recording from the brain. The system will directly measure optical path-length changes in neural tissue that correlate with neural activity.

The PARC team, under principal investigator Dr. Krishnan Thyagarajan, aims to develop a completely noninvasive acousto-magnetic device for writing to the brain. Their approach pairs ultrasound waves with magnetic fields to generate localized electric currents for neuromodulation. The hybrid approach offers the potential for localized neuromodulation deeper in the brain.

The Rice University team, under principal investigator Dr. Jacob Robinson, aims to develop a minutely invasive, bidirectional system for recording from and writing to the brain. For the recording function, the interface will use diffuse optical tomography to infer neural activity by measuring light scattering in neural tissue. To enable the write function, the team will use a magneto-genetic approach to make neurons sensitive to magnetic fields.

The Teledyne team, under principal investigator Dr. Patrick Connolly, aims to develop a completely noninvasive, integrated device that uses micro optically pumped magnetometers to detect small, localized magnetic fields that correlate with neural activity. The team will use focused ultrasound for writing to neurons.

Magnetism Plays Key Roles in DARPA Research to Develop Brain-Machine Interface without Surgery

For the BrainSTORMS project, the Battelle team, under principal investigator Dr. Patrick Ganzer, aims to develop a minutely invasive interface system that pairs an external transceiver with electromagnetic nanotransducers that are nonsurgically delivered to neurons of interest. The nanotransducers would convert electrical signals from the neurons into magnetic signals that can be recorded and processed by the external transceiver, and vice versa, to enable bidirectional communication.

Battelle’s BrainSTORMS offering is one of the most successful of the bunch, and has secured additional funding from DARPA to the tune of $20.4 million. BrainSTORMS uses tiny nanotransducers known as MEnTs, or magnetoelectric nanotransducers.

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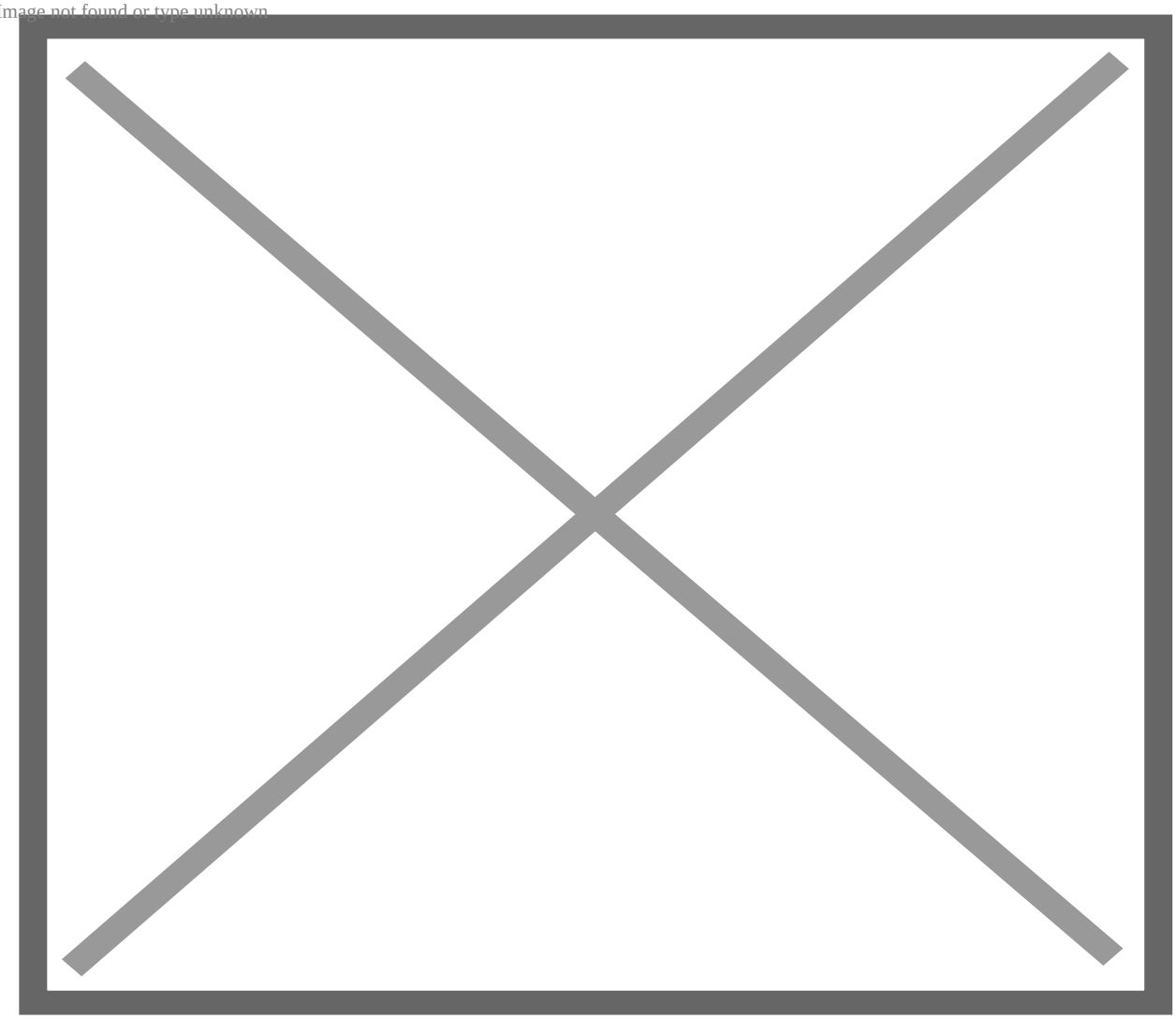

They work by electromagnetic resonance, the same exact technology behind Wacom pen digitzer tablets. A Wacom tablet uses a grid of wires in a printed circuit board inside a tablet to generate close-coupled electromagnetic fields (B-fields) and power the pen via electromagnetic resonance. MEnTs use a grid of wires in a printed circuit board inside a helmet worn on the user's head to generate close-coupled electromagnetic fields and power the MEnTs via electromagnetic resonance. It's absolutely identical.

MEnTs are definitely small enough to fit through a vaccine needle. Each one is actually about six times smaller than the SARS-CoV-2 virus and impossible to see with the naked eye.

Dr. Gaurav Sharma, the head of Battelle's BrainSTORMs program, was also involved in DTRA's Blood-Brain Barrier Program (yes, the same Defense Threat Reduction Agency that funded EcoHealth Alliance), which sought to discover various means of bypassing the blood-brain barrier.

Early Successes of DTRA's Blood-Brain Barrier Program Suggest New Countermeasures

The program aims to understand the effects of nerve agents and alphaviruses on the blood-

> brain barrier and find new transport pathways to deliver appropriate therapeutics into the CNS. The early successes of JSTO's program allows researchers to better assess the risks of emerging threats while enhancing their ability to protect and treat warfighters from a broad range of chemical and biological threats.

Incidentally, SARS-CoV-2 Spike, which attacks the vascular endothelium, has been known to permeabilize and penetrate the blood-brain barrier.

SARS-CoV-2 Spike Protein Disrupts Blood–Brain Barrier Integrity via RhoA Activation

> ELISA assays indicated that S1 spike protein significantly increased the activation of RhoA, demonstrating that the small GTPase influences barrier breakdown in response to SARS-CoV-2. The activation of RhoA has been shown to induce cell contractility and cytoskeleton restructuring, resulting in enhanced cell motility and disrupted barrier integrity (Shaw et al. 1998; Mikelis et al. 2015). This conclusion is supported by permeability and TEER testing showing that the detrimental effects of S1 spike protein on the BBB are ablated by inhibiting RhoA activation (Fig. 3). Given that RhoA activates the Rho kinase (ROCK), it is noteworthy that the therapeutic effects of ROCK inhibition have already been considered for the treatment of severe COVID-19 (Abedi et al. 2020b). In fact, preclinical studies have shown the benefits of inhibiting the Rho-ROCK pathway to improve pulmonary outcomes (Xu et al. 2019; Abedi et al. 2020a). Additionally, ROCK inhibitors have been shown to protect pulmonary tissue during severe respiratory illness (Abedi et al. 2020a, b). The effects of ROCK inhibition seems to also confer vascular protection by showing improved neurological outcomes following ischemic stroke (Shibuya et al. 2005). Perhaps a similar therapeutic approach could be developed to prevent neurological deficits associated with COVID-19.

SARS-CoV-2 Spike Proteins Disrupt the Blood-Brain Barrier, Potentially Raising Risk of Neurological Damage in COVID-19 Patients

> ACE2 is expressed on endothelial cells, which form the inner lining of blood vessels, and serves a central role in mediating different functions of the cardiovascular system. According to Dr. Ramirez, "since ACE2 is a major binding target for SARS-CoV-2 in the lungs and vasculature of other organs in the body, tissues that are behind the vasculature, that receive blood from affected vessels, are at risk of damage from the virus."
>
> It has been unclear, however, whether ACE2 is also present in the brain vasculature or whether its expression changes in health conditions that worsen COVID-19, such as high blood pressure (hypertension). To find out, the team began by examining postmortem human brain tissue for vascular ACE2 expression, using tissues from individuals without underlying health conditions and from individuals in whom hypertension and dementia had been established. Analyses showed that ACE2 is in fact expressed throughout blood vessels in the frontal cortex of the brain and is significantly increased in the brain vasculature of persons with a history of hypertension or dementia.
>
> The researchers then investigated the effects of the SARS-CoV-2 spike protein on brain

> endothelial cells in cell culture models. Introduction of the spike protein, particularly a portion designated subunit 1, produced substantial changes in endothelial barrier function that led to declines in barrier integrity. The researchers also uncovered evidence that subunit 2 of the SARS-CoV-2 spike protein can directly impact blood-brain barrier function. “This is of importance because unlike subunit 1, subunit 2 of the spike protein doesn’t bind to ACE2, meaning that a breach to the blood-brain barrier could occur in a manner that is independent of ACE2,” explained postdoctoral fellow and first author on the new report Tetyana P. Buzhdygan, PhD.

Why are the authorities so insistent on people taking a vaccine that causes their cells to produce SARS-CoV-2 Spike proteins?

James Giordano, NeuroS/T, and the War on Brains

James Giordano is a neuroscience expert and neuroethicist who has served as Co-director of the O’Neill-Pellegrino Program and in an advisory role at DARPA.

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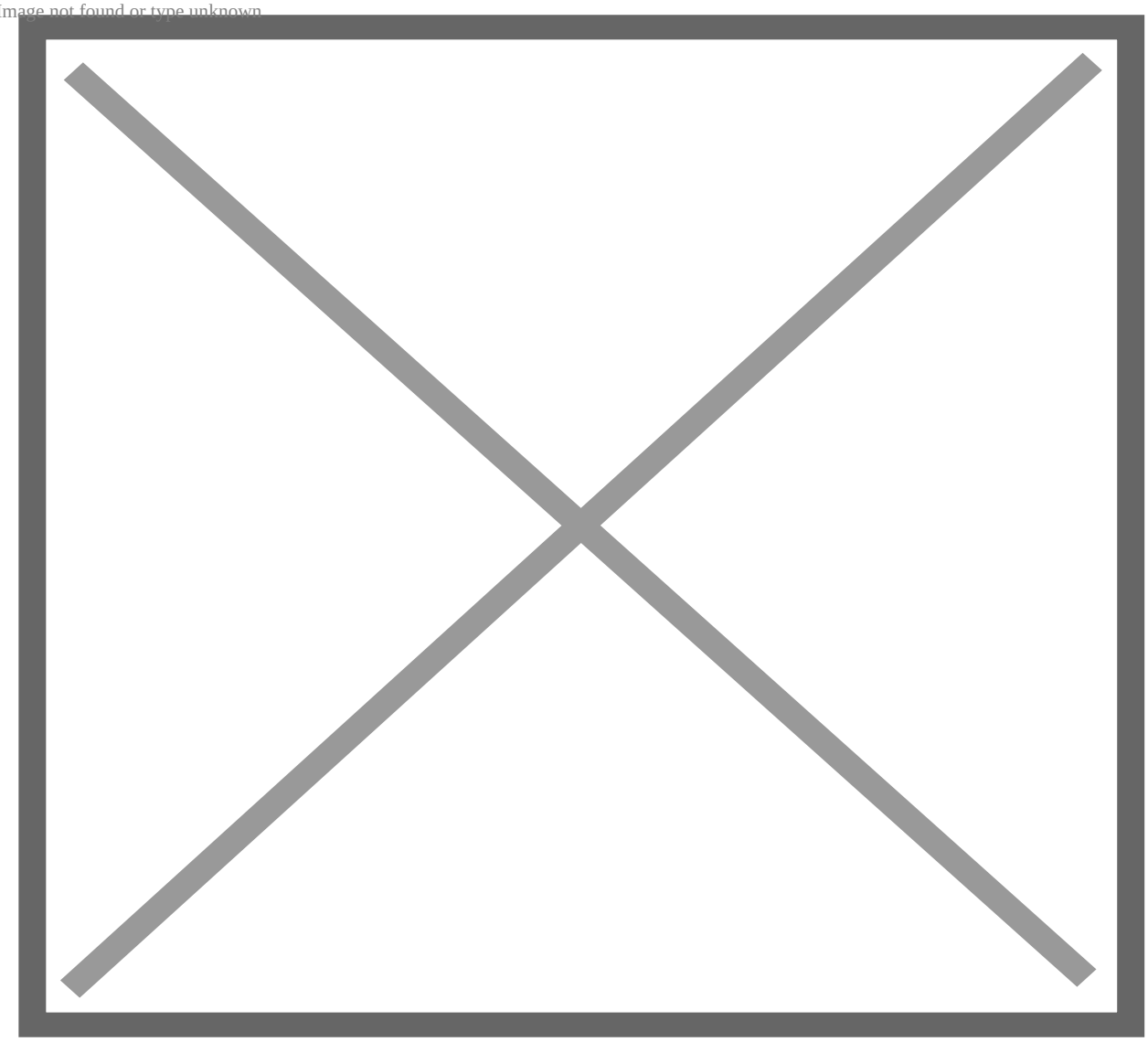

James Giordano, PhD, MPhil

James Giordano, PhD, MPhil, is Chief of the Neuroethics Studies Program, Scholar-in-Residence, leads the Sub-Program in Military Medical Ethics, and Co-director of the O'Neill-Pellegrino Program in Brain Science and Global Health Law and Policy in the Pellegrino Center for Clinical Bioethics; and is Professor in the Departments of Neurology and Biochemistry at Georgetown University Medical Center, Washington, DC, USA. He is also Distinguished Visiting Professor of Brain Science, Health Promotions and Ethics at the Coburg University of Applied Sciences, Coburg, Germany, and was formerly 2011-2012 JW Fulbright Foundation Visiting Professor of Neurosciences and Neuroethics at the Ludwig-Maximilians University, Munich, Germany.

Prof. Giordano currently serves as Chair of the Neuroethics Program of the IEEE Brain Project, and an appointed member of the Neuroethics, Legal and Social Issues (NELSI) Advisory Panel of the Defense Advanced Research Projects' Agency (DARPA). He has

> previously served as Research Fellow and Task Leader of the EU Human Brain Project Sub-Project on Dual-Use Brain Science; an appointed member of United States Department of Health and Human Services Secretary's Advisory Council on Human Research Protections (SACHRP); and as Senior Science Advisory Fellow of the Strategic Multilayer Assessment Branch of the Joint Staff of the Pentagon.

For years, he has been warning people about the immense dangers of neuroscience and technology – what he terms NeuroS/T – if they were to be misused.

He was one of the first people to recognize that there were no regulatory barriers preventing the unethical use of neuroscience and technology for mind control, sociopolitical manipulation, and warfare. His presentations are absolutely shocking in their implications.

A few more searches leads one down a rabbit hole of NATO strategists thinking up ways to use NeuroS/T in warfare, and to defend against its use by rival powers.

Cognitive Warfare Project – Reference Documents

We can already see primitive examples of cognitive warfare even in today's politics, in the form of mass propaganda campaigns, social media bots manipulating public opinion, and so on. The next step is to directly attack people's brains, and not just the brains of enemy soldiers. The brains of civilians, too. After all, in total warfare, every civilian is a threat, because they contribute industrial output to an enemy nation. An whole country can be paralyzed by its entire workforce going on strike. What if you had the ability to make everyone in an enemy nation walk out of their jobs and become listless and deranged by directly attacking their brains? The fields and factories would go fallow. The war machine would grind to a halt.

This potential, along with various other horrifying possibilities, has not gone unnoticed. Even now, military big-shots on both sides of the pond are scheming up ways to attack the cognitive basis of an enemy nation by using nanoparticles and other such examples of weaponized NeuroS/T. It is, in short, chemical warfare by another name. A form of chemical warfare so subtle and deniable, it bypasses existing laws and treaties.

Only through immense hubris could human beings dream of doing this to each other, and only with unspeakable cruelty could we actually carry it out. However, just as with Michael Aquino's *MindWar*, some will argue that cognitive attacks to achieve geopolitical objectives are more humane and entail less loss of life than achieving them by shooting people with bullets and blowing them up with bombs.

We at ICENI have a novel idea. It's called leaving innocent people alone.

Undisclosed Ingredients

Numerous groups have come forward with claims that COVID-19 vaccines contain various undisclosed ingredients, including nanoparticles of varying shape, size, and material composition.

These groups include:

Ricardo Delgado, with La Quinta Columna:

Ricardo Delgado: ‘They are injecting graphene oxide as an adjuvant in vaccines’

> ***Graphene has precisely that quality: it becomes magnetic in contact with the hydrogen in the body***. *Of course it does. The reason is the lipid capsule that I was telling you about —Look! It’s rising up to 144mV—. A lipid capsule to encapsulate, supposedly, what on this occasion we’re going to call ‘vaccine’. The mRNA is really to encapsulate the graphene so that it gets to the brain neurocortex undetected by the immune system. That’s…, that’s the sole purpose. And this is the massive deception that they have subjected the entire population to.*

Andreas Noack (who was arrested by German Police on livestream, and then rumored to have been murdered):

Also, there is a group called UNIT that has performed their own analysis:

Qualitative Evaluation of Inclusions In Moderna, AstraZeneca and Pfizer Covid-19 vaccines

> This report is the submission of initial findings that confirm the presence of graphene compounds in each of the injection vials. Though a quantitative estimate has not be established for the concentration of graphene in the samples, its occurrence is on a high frequency range on an average 2cm transect when counts were conducted on a higher magnification (40x).

Graphene oxide nanoparticles can affect the brain in some rather profound ways.

Graphene oxide prevents lateral amygdala dysfunctional synaptic plasticity and reverts long lasting anxiety behavior in rats

> Engineered small graphene oxide (s-GO) sheets were previously shown to reversibly down-regulate glutamatergic synapses in the hippocampus of juvenile rats, disclosing an unexpected translational potential of these nanomaterials to target selective synapses *in vivo*. Synapses are anatomical specializations acting in the Central Nervous System (CNS) as functional interfaces among neurons. Dynamic changes in synaptic function, named synaptic plasticity, are crucial to learning and memory. More recently, pathological mechanisms involving dysfunctional synaptic plasticity were implicated in several brain diseases, from dementia to anxiety disorders. Hyper-excitability of glutamatergic neurons in the lateral nucleus of the amygdala complex (LA) is substantially involved in the storage of aversive memory induced by stressful events enabling post-traumatic stress disorder (PTSD). Here we translated in PTSD animal model the ability of s-GO, when stereotaxically administered to hamper LA glutamatergic transmission and to prevent the behavioral response featured in long-term aversive memory. We propose that s-GO, by interference with glutamatergic plasticity, impair LA-dependent memory retrieval related to PTSD.

Thanks to their conductivity, their supposed biocompatibility, and other unique properties, graphene nanoparticles can also be used as the basis of a brain-computer interface.

Interfacing Graphene-Based Materials With Neural Cells

> The scientific community has witnessed an exponential increase in the applications of graphene and graphene-based materials in a wide range of fields, from engineering to electronics to biotechnologies and biomedical applications. For what concerns neuroscience, the interest raised by these materials is two-fold. On one side, nanosheets made of graphene or graphene derivatives (graphene oxide, or its reduced form) can be used as carriers for drug delivery. Here, an important aspect is to evaluate their toxicity, which strongly depends on flake composition, chemical functionalization and dimensions. On the other side, graphene can be exploited as a substrate for tissue engineering. In this case, conductivity is probably the most relevant amongst the various properties of the different graphene materials, as it may allow to instruct and interrogate neural networks, as well as to drive neural growth and differentiation, which holds a great potential in regenerative medicine. In this review, we try to give a comprehensive view of the accomplishments and new challenges of the field, as well as which in our view are the most exciting directions to take in the immediate future. These include the need to engineer multifunctional nanoparticles (NPs) able to cross the blood-brain-barrier to reach neural cells, and to achieve on-demand delivery of specific drugs. We describe the state-of-the-art in the use of graphene materials to engineer three-dimensional scaffolds to drive neuronal growth and regeneration *in vivo*, and the possibility of using graphene as a component of hybrid composites/multi-layer organic electronics devices. Last but not least, we address the need of an accurate theoretical modeling of the interface between graphene and biological material, by modeling the interaction of graphene with proteins and cell membranes at the nanoscale, and describing the physical mechanism(s) of charge transfer by which the various graphene materials can influence the excitability and physiology of neural cells.

Graphene-based neural interface allows improved brain activity mapping

> The study of the brain aiming at comprehending its workings requires a thorough analysis of cerebral electrophysiology, as well as investigating the relation between neural activity patterns and behaviour. In order to perform these studies, researchers need to have access to and record brain activity – i.e. the signals produced in it – over a long period of time and across different states. This translates in the need for neural sensing interfaces able to detect signals from different channels, over a wide frequency range, and with high spatial resolution and sensitivity. In addition, the sensors should be integrated in flexible substrates and, of course, be biocompatible. Meeting these requirements is not an easy task.
>
> **Graphene-based active sensors** are promising candidate for this application, thanks to the flexibility of graphene, its electronic properties, as well as its high stability and biocompatibility. In particular, graphene solution-based field-effect transistors (g-SGFET) have shown very good performance, especially in terms of sensitivity to cortical signals in

> the infra-slow (<0.5 Hz) frequency band. For graphene active sensors arrays to be used as reliable tools for neuroscientific research, the maturity of this technology and its large-scale applicability needed to be demonstrated.

If COVID-19 vaccines do indeed contain graphene nanoparticles, this should be treated as *highly* suspicious; proof of an attempt at mass social engineering by techno-psychosocialization using undisclosed NeuroS/T in a highly unethical manner, or else, an attempt at mass poisoning.

A Hypothetical Mind Control System

Based on the aforementioned technologies, we at ICENI have come up with a concept for what mind control by these methods may look like:

- Someone receives a COVID-19 vaccine. This vaccine contains both genetic material coding for SARS-CoV-2 Spike and mind control nanotransducers.
- Genetic material for SARS-CoV-2 Spike becomes integrated into genome via LINE-1 reverse transcription. Subject now constantly produces Spike.
- SARS-CoV-2 Spike injures and permeabilizes the blood-brain barrier, allowing the nanotransducers to cross the BBB and enter the brain (this endothelial toxicity also causes a great deal of blood clotting abnormalities in many people).
- Nanotech crosses cell membranes and takes up residence in, or alongside, the neurons.
- Some of the nanotransducers self-assemble into larger antennae, electrodes, and nanoelectronic components capable of receiving RF in frequency ranges that can deeply penetrate brain tissue.
- 5G base stations use beamforming and MIMO to focus directed beams of RF into the subjects' heads.
- The RF energizes the nanotransducers by wireless harvested power.
- An external encoder/decoder unit begins sending signals to stimulate specific brain regions, with the nanotransducers acting as an interface.
- The subject is now under the effects of precision mind control.

There are many drawbacks with this method. The spatial resolution and fidelity of using RF for this is very low. Two-way communication may be an insurmountable technical hurdle, but one-way stimulation of a specific brain region may be possible. Another drawback is the rather extreme EMF exposure the brain suffers, with far-field RF being beamed directly into it.

Finer control and two-way communication may be possible with near-field electromagnetic resonance instead of RF harvesting, using something far more intimate and obvious, such as a neurohelmet (like with Battelle's BrainSTORMS).

The key to all of this is understanding the principles of wireless energy transfer, and how scientists have sought to apply those principles to neurotechnology:

Wireless and battery-free technologies for neuroengineering

> Here, we provide an overview of the latest technologies in such classes of wireless implantable devices and compare their designs and capabilities with those of tethered and

> battery-powered systems. We discuss materials selections and engineering approaches for the development of functional interfaces in the context of biocompatibility and hermeticity, wireless data communication and wireless power transfer. Although we highlight the use of these technologies for fundamental neuroscience research and for multifunctional neuroengineering in small animals, these same platforms also establish strategies and methods for devices that can be used in large animals and humans.

Does this sound preposterous? Consider, if you will, the massive campaign of well-poisoning surrounding both vaccines and 5G in the years leading up to the present. It wasn't just one or two outspoken people; it was hordes of propagandists working around-the-clock to discredit the notion that vaccines or 5G could be harmful, by enthusiastically aligning such viewpoints with the furthest fringe ideas.

Consider, also, that 5G base stations are the first GSM base stations to incorporate phased-array antennas with beamforming technology, which gives them the capability to focus tight beams of RF at a target, optimizing wireless power transmission.

Lastly, consider the very odd case of Elsagate, and all of the strange "child-friendly" videos on YouTube over the past decade that featured age-inappropriate subject matter, such as children and anthropomorphic animals receiving injections over and over.

No one could have ever suspected that the powers-that-be could be planning something like this. No one could have ever expected that it was the *combination* of 5G and vaccines that would produce this result. Or could they?

Here's a link to a clip of Dr. Pierre Gilbert, in 1995, stating, quite literally, that the Elites were planning to inject people with mandatory vaccines that would contain nanoparticles that would enter the brain and act as RF receivers.

The technology to do this was speculative back then.

It is no longer speculative. It is real.

Bill Gates, Redux

Bill Gates has spent the past couple decades pushing vaccines as part of his anti-natalist, Neo-Malthusian sustainability agenda.

Bill Gates talked about using vaccines to control population growth, here is the unedited 2010 TED Talk video plus the transcript

> "First, we've got population. The world today has 6.8 billion people. That's headed up to about nine billion. Now, if we do a really great job on new vaccines, health care, reproductive health services, we could lower that by, perhaps, 10 or 15 percent …"

Some take this out of context to imply that Bill Gates was suggesting that we should kill off 10 to 15

percent of the population with vaccines. That's not the case. If it was, he would have been booed off the stage. Gates is one of many who observed (correctly, I might add) that families in third-world countries have fewer children when their kids aren't dying of disease, much like how we do in developed countries. In other words, without vaccination, the reproductive strategy in places like Sub-Saharan Africa is to take the scattershot approach; have a dozen kids, and hope for half of them to survive to adulthood.

While we would never argue that lowering the disease burden of these countries is an ignoble goal, it is certainly true that Mr. Gates' interest in vaccination appears to be population reduction; if more kids survive, then you can stand to have fewer kids, or so his logic goes.

Microsoft's patent WO/2020/060606 describes a "cryptocurrency system using body activity data".

Microsoft Patents New Cryptocurrency System Using Body Activity Data

> Different types of sensors can be used to "measure or sense body activity or scan human body," the patent explains. They include "functional magnetic resonance imaging (fMRI) scanners or sensors, electroencephalography (EEG) sensors, near infrared spectroscopy (NIRS) sensors, heart rate monitors, thermal sensors, optical sensors, radio frequency (RF) sensors, ultrasonic sensors, cameras, or any other sensor or scanner" that will do the same job.
>
> The system may reward cryptocurrency to an owner or a task operator "for providing services, such as, search engines, chatbots, applications or websites, offering users access for free to paid contents (e.g. video and audio streaming or electric books), or sharing information or data with users," the patent details.

As it so happens, "any other sensor or scanner" is a category that also includes brain-computer interfaces.

The same month as the patent application, Bill Gates left the board of Microsoft.

Bill Gates left Microsoft board amid probe into relationship

> The founder and former head of the US technology giant stepped down as board chair in March 2020.
>
> "Microsoft Corp. board members decided that Bill Gates needed to step down from its board in 2020 as they pursued an investigation into the billionaire's prior romantic relationship with a female Microsoft employee that was deemed inappropriate," the Journal reported, citing people close to the matter.
>
> This was "an affair almost 20 years ago which ended amicably," a spokeswoman for Gates told the Journal.

The response to the trucker protests and to Russia's invasion of Ukraine demonstrates something; if you defy the neoliberal technocracy, you will be punished by having your access to financial services cut off

, your bank accounts disabled digitally. People will call for your cars to be shut off by remote, and, indeed, for Microsoft to stop supporting the operating system on your computer.

Of course, all of this primarily affects private citizens. Heads of state and military, both in NATO and the modern-day Eastern Bloc, have backups and alternatives that cannot be cut off so easily.

What the powers-that-be desire is a kill switch; a way to cut off dissidents from all support at the push of a button. All-digital, paperless currency paves the way for this sort of absolute, despotic control. If it's linked to a digital ID and to a BCI, then it's basically a part of one's physical person that can be revoked by the authorities at any time.

Klaus Schwab and Transhumanism

Klaus Schwab and the WEF are openly and obviously transhumanist. Numerous WEF personnel have been interviewed and given talks where they've openly discussed human implantation and augmentation, how it will affect human nature, how it will integrate with an entirely new economy that Klaus Schwab refers to as the Fourth Industrial Revolution, and so on.

Klaus Schwab: Great Reset Will "Lead to a Fusion of Our Physical, Digital and Biological Identity"

> The agenda is primarily based around dismantling the current capitalist system in favor of greater centralized technocrat rule which will lead to lower living standards, less fuel consumption, fewer civil liberties and the accelerated automation of jobs.
>
> However, another key aspect to "The Great Reset," or the "fourth industrial revolution" as Schwab calls it, is merging man with machine.
>
> "What the fourth industrial revolution will lead to is a fusion of our physical, digital and biological identity," Schwab told the Chicago Council on Global Affairs.

Klaus Schwab's books refer to human augmentation on multiple occasions, usually in the context of wider societal transformation brought on by the digitization of the economy.

In light of all this, the so-called "Great Reset" may conceal an agenda far more sinister than it may appear on the surface.

Techno-Psychosocialization

Brain-computer interfaces have many beneficial uses, such as enhancing intelligence and creativity, restoring sight to the blind, bridging a spinal injury and sending motor impulses to the limbs in the paralyzed, correcting treatment-resistant mental illnesses like schizophrenia and major depression, and for productivity and entertainment purposes.

With a neural lace coupled to a virtual realm, anyone could commute anywhere, across the globe, headset-free, instantaneously, without the need for expensive travel arrangements or fossil fuel usage,

using something akin to the Metaverse. The potential for the usage of BCIs in interactive entertainment media is limitless. Instead of wearing clunky VR goggles and getting eyestrain, someone could close their eyes and literally *embody* their favorite video game characters.

However, BCIs have a dark underbelly. Their rapid development is being funded and backed by military think tanks and intelligence agencies, with the supposed goal of giving soldiers an edge in combat, allowing them to control drones with their minds and have video feeds piped right into their heads.

Soldiers with BCIs implanted in their brains could have their sensory perception and emotional regulation altered to view the enemy as monsters, just like that one Black Mirror episode. Or, they could have their emotions deadened completely to make them fine with killing. Such a military is also coup-proof. Any rebellious thoughts are simply deleted from their heads. Their anxieties, erased by stimulation of their pleasure centers. Their fear, their hatred, abolished. Basically, they're reduced to bio-robots.

The same technology could also be applied to the citizenry, without our knowledge or consent, neutralizing aggression and self-interested tendencies and rendering us docile and compliant servants of the technocratic New World Order. You, the reader, may view this as highly unethical, and it is. However, it is not illegal. There are no regulations that specifically forbid BCIs from being used to alter people's affective states, mood, and cognition, thereby turning them into obedient slaves. It is the task of regulators to make autonomy-violating BCIs illegal *before* they can be used to harm us.

Don't think of this as science fiction. It has already been done with DBS electrodes.

Experimental brain implant zaps away depression in real-time

> Within days of the personalized device being implanted, Sarah's depression began to lift. Before the implant she scored 36 out of 45 on the Montgomery–Åsberg Depression Rating Scale (MADRS). Just 12 days after the implant had been turned on her score had dropped to 14, and several months later it had fallen further, eventually landing on a score of 10 which is a formal score signifying clinical remission.
>
> "The idea of stimulating somebody and just a few seconds later, them saying, 'My depression is gone' … it is just stunning," Krystal said to StatNews. "They have this experience where they haven't felt this good in years, they get hope. They feel like there's a sense of relief that it feels like it's not their fault because it's changeable by modulating brain circuitry."

Can Electrically Stimulating Your Brain Make You Too Happy?

> The two began with a single volt. Not much happened. The patient's well-being or "happiness level" was down around two, while his anxiety was up at eight. With another volt, his happiness level crawled up to three, and his anxiety fell to six. That was better but still nothing to write home about. At four volts, on the other hand, the picture was entirely different. The patient now described a feeling of happiness all the way up to the maximum

> of 10 and a total absence of anxiety.
>
> "It's like being high on drugs," he told Synofzik. The neurologist turned up the voltage one more notch for the sake of the experiment, but at five volts the patient said that the feeling was "fantastic but a bit too much." He had a feeling of ecstasy that was almost out of control, which made his sense of anxiety shoot up to seven.
>
> The two agreed to set the stimulator at three volts, which left the patient at a "normal" level of happiness and anxiety, and would not exhaust the $5,000 battery too quickly. But the next day, when the patient was to be discharged, he went to Synofzik and asked whether they might not turn the voltage up anyway before he went home. He felt fine, but he also felt that he needed to be a "little happier" in the weeks to come. The neurologist refused. The patient finally gave in and went home in his median state with an agreement to return for regular checkups.

By stimulating the nucleus accumbens, a teeny tiny region of the brain, one can pipe as much pleasure into someone else's head as they want, like wireheads from Niven's *Known Space* universe. What is done with primitive DBS electrodes today will be done with two-way nanoparticle BCIs tomorrow, allowing people's affective states, cognition, and decision-making processes to be altered by remote, robbing them of agency and bodily autonomy. DBS electrodes in the nucleus accumbens have been used to treat refractory alcoholism. If they could be used for that, then they could be used to satisfy *any* craving.

Using algorithmic control, monitoring people's GPS location, media consumption habits, and other parameters, BCIs could even be used for operant conditioning, withdrawing pleasurable stimuli when someone does something unapproved by the system, causing them to associate whatever it is with having a negative mood, or providing a little emotional boost when someone does something the system approves.

Consider what the World Economic Forum said, about how people will own nothing and will be happy. What they mean by this is that servitization will replace private property (i.e. renting things on a temporary basis, like driverless Ubers, Lime bikes, and Rug Doctors), and that the remainder of the satisfaction of owning things will be made up of what we at ICENI call *techno-psychosocialization*; using things like BCIs and drugs to provide a reward stimulus that would have been previously obtained by accomplishing real goals and obtaining real goods through real effort. This is the essence of techno-psychosocialization: the reinforcing of one's socialization by technological interventions aimed at altering the psyche.

The cycle of societal transformation is now complete; instead of Theodore Kaczynski's surrogate activities, we now have surrogate stimuli. No "activity" is necessary at all. In fact, the human organism could be allowed to vegetate under these conditions, experiencing absolute hedonism no matter their life circumstances.

With a wealthy upper caste interested in anti-natalism, Neo-Malthusianism, and “sustainability”, onecan be certain that techno-psychosocialization would be used to limit the luxuries of the lower classesand provide an illusory substitute. With a neural lace pumping pleasure into your brain, you could beliving in a shanty town built from corrugated aluminum like in Ready Player One and feel like you’re ontop of the world. Fried locusts would taste like caviar to you.

The depredations of the Elite under such an arrangement would be limitless, with everyone in the “lesser” classes potentially reduced to chattel slavery, or worse. Imagine a world with a caste system where implanted serfs had no ability to resist a compulsion placed upon them by their “betters”. Imagine how that could be abused in the most sickening ways possible. Imagine if the Elites had a pushbutton remote that could make anyone consent to being the victim of physical or sexual abuse.

Picture if they had the ability not only to make people comfortable with their own genocide, but actually have them walk into a disposal unit with a smile on their faces, all at the touch of a button.

If, as José Delgado said, humans have no right to our own private thoughts, then we have very, very little indeed. Even a prisoner held in the most abject conditions imaginable still has their mind as their final refuge.

With compulsory BCIs, it is no longer a refuge. There is no refuge. There is nothing.

A two-way BCI of high enough fidelity to pipe sensory experiences into people’s head and override one’s actual senses, like in The Matrix, is the ultimate torture device.

One passage from Iain Banks’ *Excession* presages the dangers inherent to the technology*:*

> It was a little bundle of what looked like thin, glistening blue threads, lying in a shallow bowl; a net, like something you’d put on the end of a stick and go fishing for little fish in a stream. She tried to pick it up; it was impossibly slinky and the material slipped through her fingers like oil; the holes in the net were just too small to put a finger-tip through. Eventually she had to tip the bowl up and pour the blue mesh into her palm. It was very light. Something about it stirred a vague memory in her, but she couldn’t recall what it was. She asked the ship what it was, via her neural lace.
>
> *That is a neural lace*, it informed her. *A more exquisite and economical method of torturing creatures such as yourself has yet to be invented.*

Before the neural lace, you had but one body to torture, which would eventually succumb and die. After? You have an endless number of virtual bodies that can be made to suffer anything one’s captors can dream up, no matter how twisted.

Imagine being forced to experience the terror of being tossed in an industrial shredder a thousand times, and being unable to die during all of it. Imagine having all your limbs pried off your body, and then regrown, and then pried off again.

Imagine if that was the price of disobeying the State.

A tyrant couldn’t hope for a better tool with which to maintain their tyranny.

-*Spartacus*

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