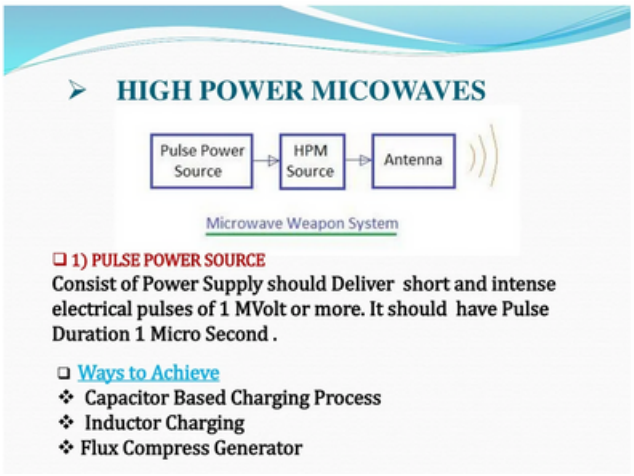
Geopolitical Ramifications of Direct Energy Weaponry

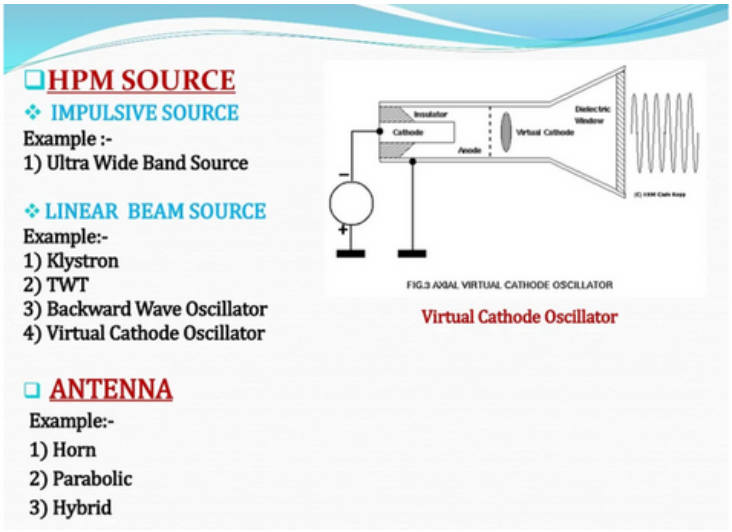
by Celeste Solum February 25, 2022

Whack a Brain Module 5

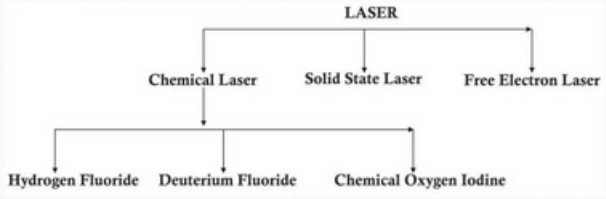
Celestesolum Rumble Channel

Summary of the Technology





LASER WEAPONS



➢ Lasers have at least three common components:

- A lasing medium or an amplifying medium that increases the intensity of the light beam (gas, liquid, solid, semi-conductor)
- A method of stimulation or pumping (pulse discharge, electricity, or chemical reaction)
- A resonant cavity (reflective mirrors)

EXAMPLE OF DEW

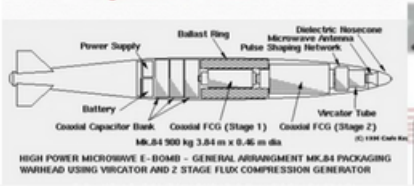
HEL MD

BoeingYAL-1

Active Deniel System

PHAsR

Boeing's CHAMP Missile



➢ Difference Between LASER & HPM

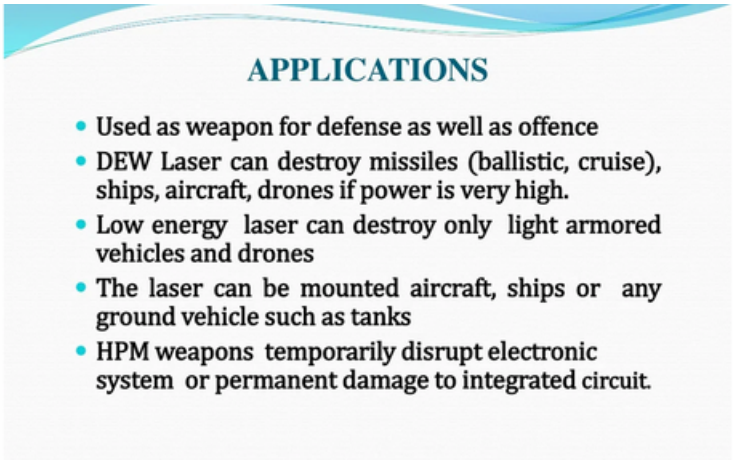
	Lasers	Microwaves	Difference
Speed	Speed of light	Speed of light	None
Trajectory	Line of sight	Line of sight	None
Range	Hundreds of Kilometers	Hundreds of meters	HPM range 10 to 100 times less
Power	Megawatts	Gigawatts	HPM 100 times greater
Wavelength	Short	Long	HPM 10,000 times longer
Beam	Narrow	Broad	HPM spreads 10,000 times more
Military Use	Precision	Large area	
Target	Multiple	People, electronics	
Lethality	Variable	High voltage,EM field, heat	

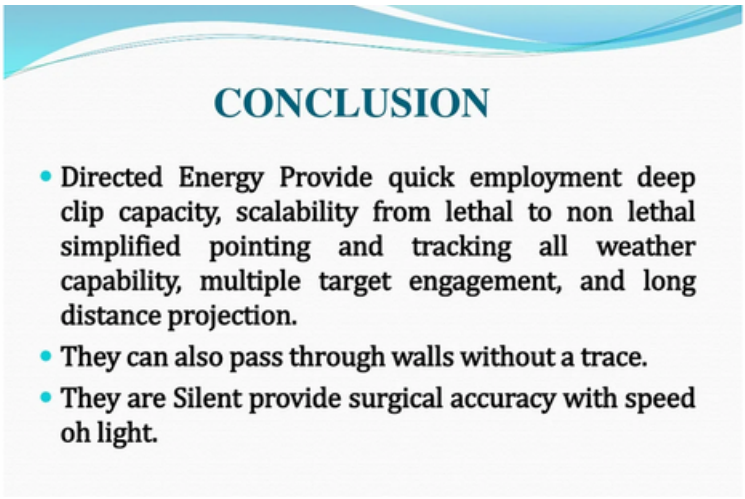
ADVANTAGE OF DEW

- **Pinpoint accuracy**
- **Low cost per use and main maintenance**
- **Unlimited magazine capacity**
- **Less lethal if tuned properly**
- **Operate in all weather condition**
- **Engage multiple target**
- **Speed of light operation**
- **They are silent**
- **Difficult to track**

➢DISADVANTAGE

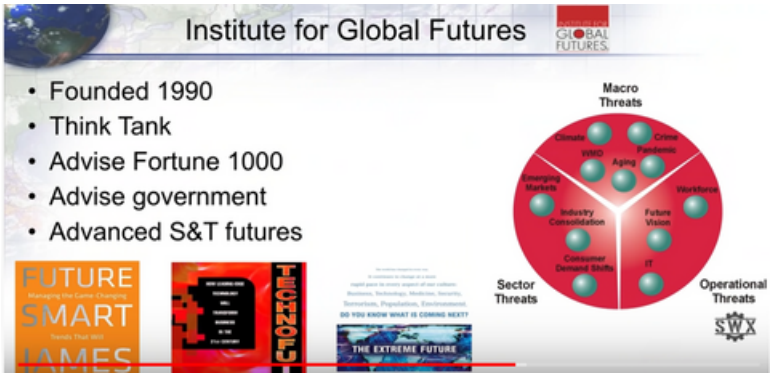
- HPM weapons has short range compared to Laser
- Laser can be Deflected, Reflected & Absorbed by physical chemical property of material.
- Laser weapon require large construction.





https://www.slideshare.net/VishalBait/ppt-on-directed-energy-weapons

Institute of Global Futures



One thing most corporations around the world and governments- look at strategic readiness factors?

How do we define readiness?

What does that model look like?

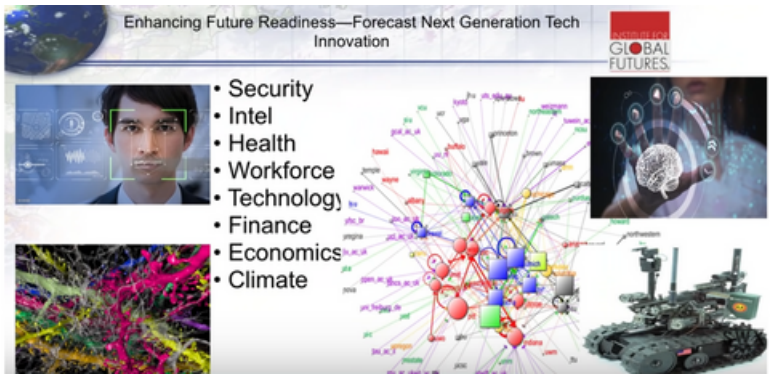
We look at a variety of different kinds of technologies.

Readiness Factor

I'll break down five today. But we will focus on neuro-technology.

Our mission really is to enhance future readiness.

Next Gen Tech Innovation



I am going to put together two concepts, and then come back to this to reiterate.

Lack of Imagination is the enemy of future readiness. Those of us who are involved in deterrence awareness know the implications of what is possible . That neuro-technology could be a candidate for new threat domain or contribute to a new threat domain.

For all intents and purposes, the only enemy to combat this threat might be a lack of imagination.

I have been working with the community in identifying a variety of technologies over a fairly long period of time. I'm still on this journey, also I'd like to just call out Dr. Giordano, who gave me an opportunity to work with him at the Center for NeuroTechnology and Potomac Institute.

We started to do some of this work, so I am going to frame out for you kind of the big picture of what newer technology looks like to give those of you who are not that aware of what that looks like. We have been focusing a bit more on the particular incident in Cuba and the analogous implications for other attacks that might have a signal or similar signature.

But really, what I'm going to do is try to paint a picture of:

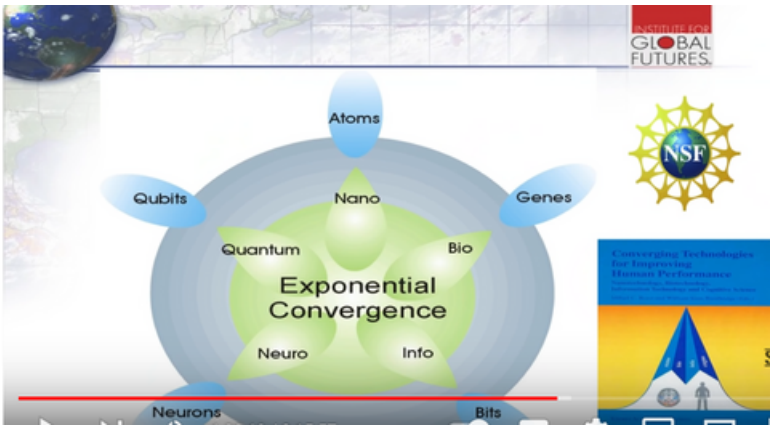
- **Where this technology has been,**
- **Where we think it's going,**
- **Drill down on this particular event.**

This is a model that came out of some work that was supported by the National Science Foundation (NSF) and it was work that was done over the past decade to consider what are the top technologies that are exponential technologies. These are the game-changers, meaning for our whole civilization. They would affect everything from healthcare, to defense, to manufacturing.

[I want you to remember this because it plays a factor in who the actors might be on the geopolitical field exploiting Direct Energy Weaponry.]

You know, what does it look like?

Exponential Convergence



The top technologies we identified as:

- **Nano**
- **Bio**
- **IT**
- **Neurological**
- **Quantum**

That would create a massive number of opportunities. Now, every one of these five technology buckets has DUAL USE so for all intents and purposes, we focus almost exclusively at NSF, in our study on converging technologies for improving human performance.

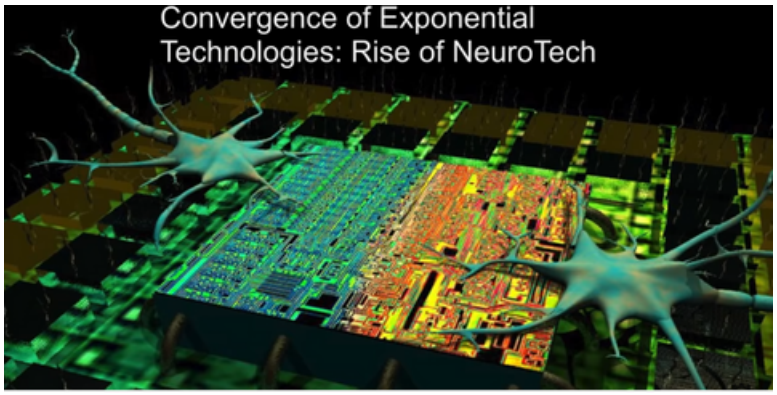
But we recognized, also, that there was a dark side DUAL USE technology has followed us throughout.

This is the manipulation of:

- **Genes**
- **Atoms**
- **Neurons**
- **Bits**
- **Qubits**

These will likely shape the next decades, if not a hundred years plus of our civilization, and there are other ones that you can fold into this one.

The Rise of Neuro-Technology



I'll be focusing on more about neuro technology convergence than the rest of the exponential technologies. Certainly, the rise of neuro technology has had a broad effect on many other areas other than just medicine.

For all intents and purposes, the one area that, quite frankly, that has not been affected has been in security and defense.

We have been looking at innovations, for instance, neural nets, at the core of artificial intelligence, that controls and monitors over a trillion dollars' worth of financial trading.

For instance, neural modeling and technology has a massive impact on chip spaces. I want to just make a point about this, the singular scientific piece of this that we published.

I just want to suggest you:

It is not just that nanotechnology is the manipulation of matter at the atomic level,

Or the mapping of the human genome,

Or the ability to create a new computing platforms in quantum computing.

Each is important. but it is how you think about these. They must be thought of together:

Nano-Bio-IT-NEURO-Quantum

That's been the big Ahah moment in doing the scientific modeling work. Why? Because most of the time, if you look at how we've organized these bodies of work, whether it's nanotechnology or neuro technology or IT -they are in silos.

You have to get folks that really get computers, to connect to neuroscientists.

Neuroscientists are not engaged with nanotechnologists, who are a kind of an engineering mashup.

Bio-technologists who are working now, there are a few crossovers such as synthetic biology. In the beginning of this convergence, the idea we were suggesting, is that if we're going to create and solve big

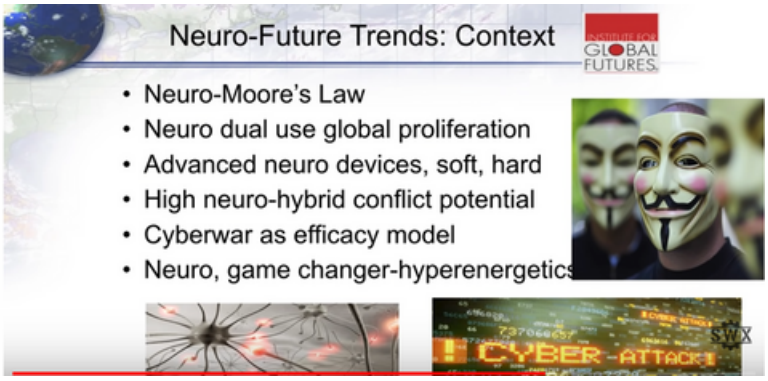
problems that are facing our nation, whether they are a secure national security or their health care-in terms of disease ,or manufacturing futures. What do we have to do?

We've got to think more holistically, about the system's approach to science to the five key technologies.

We could have chosen other ones, but these are the big strategic ones. So thinking about these together requires a different way of looking at science.

That implication dramatic implications for where we are today with neuro-technology, it also has to do with the breakthroughs that we would need to occur in healthcare and security,-certainly defense, and other domains as well.

Context of Neuro Trends



Let me talk about the big context.

If you're traveling with me on this journey, I'm going to get to our focus area and now I am going to pivot just a little bit, focusing on the trends that are associated neuro-technology.

Then go, after this particular event, and what the implications may be.

The first concept is that we're all living in Moore's Law. It is time to think about Moore's law again. As you know, I was the one of the founders of Intel, basically, the hypothesis was, that computer technology was doubling in power -originally every 18 months.

We have brought that down, it's actually collapsed, so it's less than 12 months, and that same period of time Moore said, the cost of that technology power was also being halved.

When I was at Apple Computer, we spent $2,300 to bring out the first Macintosh. You know, it's a little black and white screen, 30 megahertz, and you know it was a box. Wow! What does $2,300 get you today?

A supercomputer, most of you carry them in there in your back pocket.

We are talking about, and no one's used this word before, neuro Moore's Law.

You heard Dr. Melvin talk about these little devices. He is absolutely right! You know, this is not rocket science. All this about Moore's Law -shrinking smaller more powerful devices.

I am not going to prosecute how they are made, or that this is some exotic technology.

Maybe it is, but maybe, it actually is- That somebody hacked some pest control devices and they wove them together? Then, somebody else looked at that, as an example, and they put it with something else. Together, right?

I mean, if you want to cut to the end. It might be what the diagnostics and devices are. Then to be able to create ways to interdict and prevent this.

All the science is great!

But maybe all they need is for these devices to be stuck in every location.

That we want to stick them in there and they will do two things:

- **They will monitor and they sense, and we certainly want every sensor to be a small computer. They sense at the inaudible range.**
- **They also end up alerting, through a cloud network of the security services, if there is an intrusion and insult. That is being monitored and shows up on our grid,**
- **That is we actually interdict it.**

Now that is an operational thing, quite frankly. It would not be hard to put together. This is an operational deployment!

Before we get there, I am going to look at some other issues, as well.

So the other part of this Neuro Moore's Law is not only that every device is getting smaller, more powerful, and cheaper to deploy, but also has to do with the proliferation of those five key technologies.

The proliferation of the five: Nano-Bio-IT-Neuro-Quantum

You heard Dr. Giordano reference nano particulates and nano technology.

Again, the manipulation of matter at the atomic level.

Just let me remind you, that the era that we live in right now, anybody out there can be manipulating matter at the atomic level at home. You don't have need to have is a big lab. CRISPR technology is for doing genetic engineering where the only skill set is operating a video game!

We are living in an era of accelerated proliferation of 30 or more technologies. The implications for security, defense, and intelligence are massive as well, as they are for healthcare, manufacturing, finance, and the beat goes on.

That is the area that you're living in-accelerated exponential technologies. I named five and we will be drilling down more on neuro.

Now, are also two parts of neuro-technology. I'm carving that out of neuroscience.

Here is something to pay attention to. When it comes to neuro technology for the applications, that look like in Havanna, Cuba, and we also believe in China, against official's American officials.

It is likely there are two dimensions to neuro-nechnology:

The soft dimension:

- **which is dysfunctionality**
- **Cognitive impairment**
- **the inability to be able to make good decisions**
- **even dizziness and health effects**

But certainly, cognitive dysfunction, as a deliverable weapon

The there is the hard dimension:

- **The hard part of neuro-technology is rendering individuals not only dysfunctional, but inoperable, or even dead.**
- **Fatality.**

We haven't gotten there gladly, yet.

But the issue of non-lethal IT of weaponized capabilities, non-lethal- lethal weapons, that are associated with neuro-technology. That is the era that we're in!

My operating assumptions to do this work are:

- **Americans were attacked.**
- **American officials were attacked**
- **There was a signal sent by certain parties for a purpose.**
- **There is not the conclusion, of course.**

Well, why was that done?

It has already been demonstrated as a Proof-of-Concept.

We will talk about the implications of that.

We will get into who are the potentially geopolitical actors.

What might they want to accomplish?

But you could follow that logic pattern forward, to be able to run that out?

This is an operational, deployed capability, soft, non-lethal weapon.

The possibilities, in what we call hybrid conflicts, are that there is now a new weapon, a neuro weapon.

Neuro technology weaponry, is now available. We have to accept that as our new reality.

Particularly, we have to accept it for authenticity because:

- **It has already been deployed.**
- **It was targeted**
- **It was purposeful.**
- **I don't believe that it was an accident because of the cohort that was targeted.**

Now that we have two incidences that we can compare data on,-though we don't really need to see the data. We know that there are two populations that are similar.

There are *friendlies* that were targeted. So the assumption of accepting the deployment of a new weaponized capability is the reality. Let us get over it, okay? We got that now.

The issues are now:

- **Deterrence**
- **Prevention**
- **Diagnostics**

This is my operating premise. Neuro is likely a game changer. I want to now drill down again.

This is the larger context, but there is a variety of things you don't think about that neuro-technology, as an implication, on which I'm trying to point out.

There is a much larger phenomena in terms of impact domains where it's in the wild, with many of the same agents that I have seen.

I mean neuro-agents.

What are these neuro agents? These are:

In silico programmed, BOTS.

But what does that mean?

In silico: [computer modeling],

Programmed: [Computer programming is the process that professionals use to write code that instructs how a computer, application or software program performs. At its most basic, computer programming is a set of instructions to facilitate specific actions.]

BOTS:

[Biological definition which we must look at due to the field of biomimicry. The larvæ of several species of botfly, especially those larvæ which infest the stomach, throat, or intestines of the horse, and are supposed to be the cause of various ailments.]

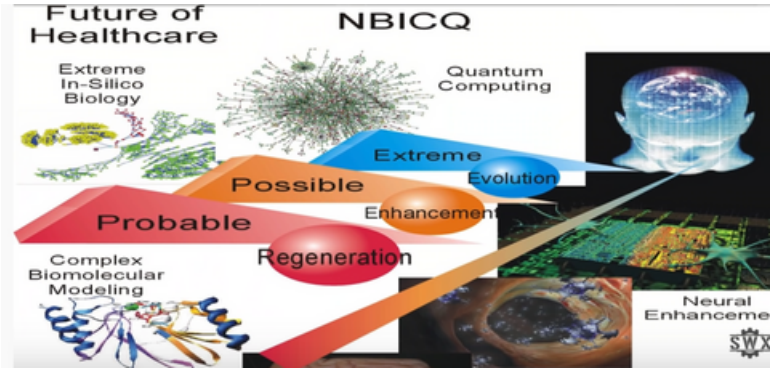
[Computer definition: What is a bot? A bot is a software application that is programmed to do certain tasks. Bots are automated, which means they run according to their instructions without a human user needing to manually start them up every time. Perhaps at the command of the quantum computer via frequency Bots often imitate or replace a human users behavior.]

These BOTS are now programmed, using the same method we model neuronal interactions in dendrites.

Again, this is just a bigger phenomenon by which to carve out, but it's not like there are not tremendous opportunities that are going on in other areas.

The implications: we haven't even talked about enhanced minds, and the performance enhancement from neuro-cognitive goals, which is another whole other dimension to this. There are direct implications and the other side of what we're talking about.

Future of Healthcare



This is expected to have a massive impact on healthcare. We don't have time to go after all this but if you would like to Deep Dive on your own it is neural enhancement. In this case, it is a deterrence for a prevention for age-related diseases. A positive thing.

Again, every DUAL USE technology, will have a dark side and a light side.

We are in that era but why now?

- **Because population path is at risk for Alzheimer's.**
- **The other half of the population will be caregivers.**
- **Some will be dealing with a phenomenal global phenomenon which comes from longevity.**

It quit frankly has to do with the aging of the brain.

And it may have to do with other insults to our civilization, that we are creating, which is a whole other factor.

But that's the era that we live in. There are a hundred companies working to defeat aging. Surprisingly, this does not predominantly have so much to do with your bones, your organs, or even disease which are we are navigating.

But, rather has to do with cognitive dysfunction and decline association.

We are in an era, you might say, where cognitive fitness is a capability that we will all need to understand better. Neuro-technology, therefore, is a deliverable in this era of cognitive fitness.

- **One side is enhancement, longevity, and health.**
- **The other side is weaponization.**

I want you to just put that in context you understand, for those of you who are unfamiliar.

Everything you hear is about robotics, artificial intelligence but what is not talked about is that all of these are converging with neuro technology. We can't get "there" without building robot brains. [What is "there"? Synthetic silicon humanoids].

What are they going to do? They are modeled after how/what nature acts. lt is known as the- bio-nano-biomimetics parallel phenomenon.

Not many folks understand the convergence of these factors or the five key technologies. All right, so neuronal self-assembly, again, we are in an era where you know one of the factors is nanoscience. I was the first private sector advisors to the inter-agency working group on nanotechnology.

What we did at NSF was we create the world revolution and Nanotechnology

We did this by by first investing under President Clinton, and then under President Bush.

We basically funded the formation of an entire new domain- Nanotechnology

But really, it was to be able to say nanotechnology can be at the table with other key technologies.

Why am I talking about this?

Because, when you start to talk about neuronal self-assembly and nanotechnology, you are talking about:

- **the ability to be able to create a new marketplace**
- **a new understanding of science and drugs**
- **and other things.**

The dark side of that, the DUAL SIDE of that, is weaponized capability.

There was a reference Dr. Giordano made earlier, and which there is a whole other conversation we could brief on, that has to do with Nano-Bio.

Neuro reprogramming is likely the driver architect for the defeat of:

- **Age-related diseases**
- **Remodulating (remodeling) skeletal and organ combinations**
- **The ability to be able to revise, analyze, and rejuvenate even your brain.**

And again, this is stuff that sounds science-fiction. It is really not. We are getting there a lot faster, and it will likely be delivered as a device.

I would hypothesize, that neuro-tech is going to be a contributing factor in driving the next hybrid war which has already started.

This is an era of soft, non-lethal, moving towards hard warfare.

What Else Can Neuro-Warfare Achieve?

Something else to think about are the implications of a neural technology capability that could render a decision-making command structure dysfunctional.

[Who establishes and orders time?

"Blessed be the name of God forever and ever, for wisdom and power belong to Him. He changes the times and seasons; He removes kings and establishes them. He gives wisdom to the wise and knowledge to the discerning. He reveals the deep and hidden things; He knows what lies in darkness, and light dwells with Him. Daniel 2]

In terms of decision-making and even distorting time the purpose is:

- **I want to distort time.**

• I want people to lose track of time.

• I want to affect that part of the brain of leaders and what they have to do, that how would that affect the battalion.

• How would that affect the series of negotiators/negotiations for a treaty?

• How would that affect people you might lose track of time?

• And I have a stress factor, that I could echo-location to deliver that signal.

Could I do this ladies and gentlemen?

YES.

The possibilities we think about hybrid conflict are irregular forces, diplomacy, cyber attacks, economic warfare.

What if neurowarfare is a new contributing dimension to that and we haven't thought about that?

We are not there, and if anything, this is a wake-up call to what that capability is.

You must think about neurowarfare in terms of deterrence.

You have to think about that differently. Why?

Because we live in an era where most of our major threats have been because of the lack of imagination that it could happen. Why?

• Because WE have most folks fighting leadership.
• That gets people to do less work that lasts [persistent].
• They engage in yesterday, not tomorrow thinking.

My suggestion is we need to think or rally about these once again. One of the other factors of Moore's Law is the accelerated velocity of innovation.

• You could just listen to this?... or

• Are you going to listen and go back and brief the command?

Listen!

What are you going to say? "There are these pest control devices you know. We think that they created this attack."

You know, it sounds crazy! Do I really want to do that pest control briefing in front of the Joint Chiefs? Can't you to hear them? I hear them laugh.

Yeah, it's like hearing the Sept 11 briefing…. you know, guys hijack planes into the World Trade Center.

Massive DDoS Attack Beta Tested

I just want to point out, interestingly, this is an example of a massive DDoS attack at St. Louis.

Over the past year, someone massive is testing a DDoS attack on the West Coast [in 2018].

This is what it looks like: Imagine!

A release is neuro-technology with tone and notice with the following:

- **It contains a botnet.**

  The core of a botnet is self-propagating.

  It is like a virus propagating in real time.

  At an ER, it presents with neurological symptoms.

  It is an activated, silicon, programmable neuronal agent.

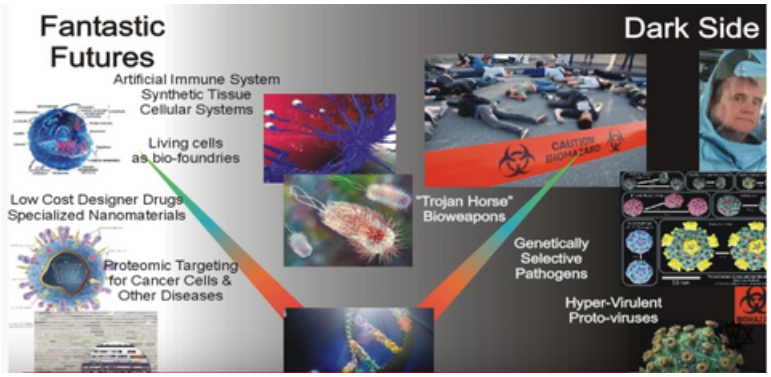
That is a lot of what it looks like.

Once it's set in motion, what does it does is like?

Ebola for Networks

(DUAL USE: Multi-Dimensional Warfare:

DDoS attack and Neuro/cavitation)



I'm trying to disrupt your thinking, to make you think along the lines of the different ways this paradigm could look like.

Looking at this stuff, as I said earlier, every technology has this DUAL USE of fantastic futures that are low-cost, for instance, designer, JA drug stuff. [This was coded and but putting it in context with research and I conclude this might be chemotherapy drugs. I could be wrong, but read on for context].

You know, being able to proteomic target cancer cells and to bio-manufacture living cells as bio foundries. We are getting at the same time we get

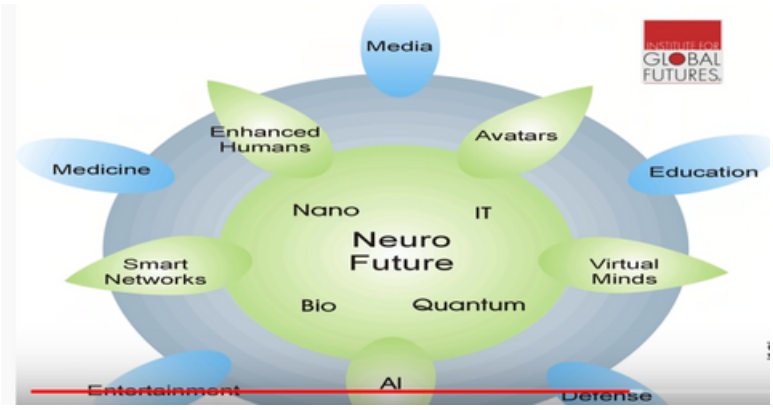
Hyper-violent proto-viruses, genetically selective pathogens and Trojan horses.

This is then applied to bio-play at the neuro-level.

We need to be forecasting and imagining these kinds of models and possibilities. Why?

Because somebody's already shot across our bow.

You know this is a clinical trial in the wild and they've used the target to be American officials. Now we have two instances. We don't know of any other instances like this, based on evidence. You have to assume it's a purposeful, targeted, attack. We got the message. Let's talk about this. It is very interesting.



What is Legal in War?

US Patent 5889870 Acoustic Heterodyne Hydra Weapon https://patft.uspto.gov/

[This slide is why we revisited the NASA Strategic Warfare 2025 document at the beginning of this series.]

Let me start with the dataset in the middle, which is what is apparently legal.

What is legal?

The notice that it has psychological effects, the psyops stuff. It is basically- dysfunctionality- succumbing the human brain to lack of capacity via acoustic weaponry.

This is about ten years old. It is not like this stuff is new. Maybe, it is being deployed in a new way.

I also want to point out the effects and the effectiveness. We have a lot of data. You have heard from our eminent faculty of doctors that this is a credible one.

- **Here is what it looks like.**
- **Here is the science.**

Heterodyne Acoustic Hydra,

Patent in 1999

I'm not going to go through all that, but I also want to point out that there is a patent from 1999.

I did a scan, as part of research with my team looking at patents.

You know when you look at patents, it gives you a sense of the intellectual property of what people were thinking about. What they wanted to do 1999.

You have got an Acoustic Hydra US Patent 5889870 dated March 30th 1999 and it's it gives you a sense of what are the possibilities: and here are some other patents as well.

https://patents.google.com/patent/US20050283818A1/en, https://www.sontek.com/media/pdfs/sonwave-pro-directional-wave-data-collection.pdf

https://patents.justia.com/patent/5889873

Justia Patents

Electrostrictive: [Exhibiting or susceptible to electrostriction.]

Magnetostrictive: [The meaning of MAGNETOSTRICTION is the change in the dimensions of a ferromagnetic body caused by a change in its state of magnetization. Deformation of a material, especially a ferromagnetic material, exposed to a magnetic field. Rapidly alternating magnetostriction causes the iron cores of transformers to hum or buzz.]

Piezoelectric: [Piezoelectricity is the electric charge that accumulates in certain solid materials—such as crystals, certain ceramics, and biological matter such as bone, DNA, and various proteins—in response to applied mechanical stress. The word piezoelectricity is electricity resulting from pressure and latent heat from a weapon in this case.]

US Patent for Piezoelectric Acoustic Transducer Patent (Patent # 5,889,873)

Piezoelectric Acoustic Transducer

Mar 11, 1997 - TDK Corporation

[What is a transducer?

1. **A substance or device, such as a piezoelectric crystal, microphone, or photoelectric cell, that converts input energy of one form into output energy of another.**
2. **A device that converts energy from one form into another.**
3. **A state machine that generates output based on a given input.]**

A piezoelectric acoustic transducer that can be reliably and easily connected with an external conductor without detracting from the vibration characteristics of the piezoelectric acoustic transducing element is provided. A first case member is provided with an acoustic hole continuous with an internal space.

A piezoelectric acoustic transducing element is constituted by mounting a piezoelectric element on one surface of a diaphragm and is housed inside the case partitioning the internal space into two portions. Ends of terminal members are connected to the piezoelectric element inside the case, their middle portions are held between the first case member and the second case member and the portions that are beyond the middle portions are led out to the outside of the case to constitute spring pieces, which are folded upward and back over the one surface of the second case member.

- **COIL DEVICE**
- **ALL-SOLID-STATE SECONDARY BATTERY**
- **MAGNETIC DOMAIN WALL DISPLACEMENT ELEMENT,**
- **MAGNETIC RECORDING ARRAY,**
- **SEMICONDUCTOR DEVICE •**
- **BLOOD PURIFICATION DEVICE**
- **PURIFICATION METHOD OF BLOOD**
- **ULTRASONIC DEVICE**

BACKGROUND OF THE INVENTION

1. Field of the Invention The present invention relates to a piezoelectric acoustic transducer that may be employed in a buzzer, a telephone or the like.

2. Discussion of Background: When electrically connecting a piezoelectric acoustic transducer and an external conductor, a lead wire covered with an insulator is employed under normal circumstances, with one end of the lead wire soldered onto a piezoelectric acoustic transducing element included in the piezoelectric acoustic transducer and the other end led out to the outside of the piezoelectric acoustic transducer and soldered onto the external conductor.

Such technology is disclosed in Japanese Examined Utility Model Publication No. 38558/1990, Japanese Unexamined Utility Model Publication No. 38399/1994, Japanese Unexamined Utility Model Publication No. 13900/1989, Japanese Unexamined Patent Publication No. 13800/1986, U.S. Pat. No. 4,006,371, U.S. Pat. No. 3,700,938 and the like.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a piezoelectric acoustic transducer that may be employed in a buzzer or a transmitter/receiver for a telephone. It is a further object of the present invention to provide a piezoelectric acoustic transducer that can be electrically connected to an external conductor easily and reliably without requiring processes such as soldering. It is a still further object of the present invention to provide a piezoelectric acoustic transducer that is capable of operating in a stable manner without detracting from the vibration characteristics of the piezoelectric acoustic transducing element. It is a still further object of the present invention to provide a piezoelectric acoustic transducer with which an improvement in reliability of the electrical connection with an external conductor is achieved. In order to achieve the objects described above, the piezoelectric acoustic transducer according to the present invention includes a case, a piezoelectric acoustic transducing element and at least one pair of terminal members. The case is constituted by combining a first case member and a second case member and has an internal space. The first case member is provided with an acoustic hole that is continuous with the internal space.

As a result, a piezoelectric acoustic transducer that is capable of operating in a stable manner without detracting from the vibration characteristics of the piezoelectric acoustic transducing element is achieved.

Furthermore, since the pressure applied by the external conductor to the spring pieces is cut off at the middle portions of the terminal members and is not, therefore, communicated to the end portions that are connected to the piezoelectric acoustic transducing element, the vibration characteristics of the piezoelectric acoustic transducing element is not adversely affected even when the reliability of the connection is improved by increasing the spring force, thereby increasing the contact pressure with the external conductor through means such as increasing the thickness of the spring pieces. be able to what the science may tell you.

Also, these are devices that are being carried around from various sources. This one is from Canada backpack. This is Moore's Law in operation.

These are also devices that have been used for crowd control larger

populations.

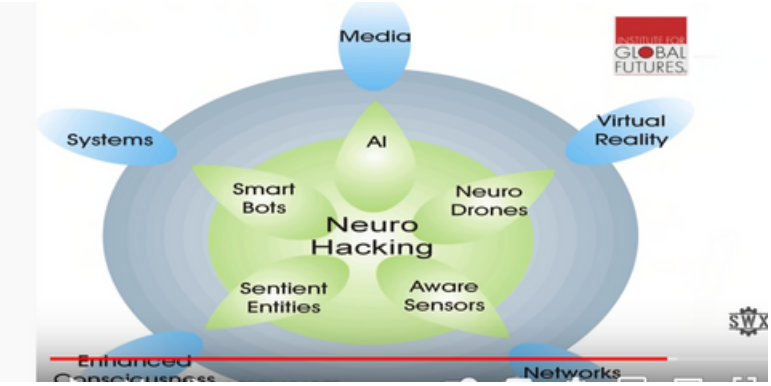
But they have targeted purposes and are portable.

These are examples of deployments. Real-time.

What I am saying is they are exactly what we have seen in Cuba or in Asia.

Similar, but these are for crowds.

You can circle the devices that are mounted, some of them, I'm not going to get into exactly what the actual technology is, but as you can see the people have their hands over their ears. You know, it's how you get a fact.



It is not like this has not been fielded.

I want to also say that you know the neuro-hacking, which is a term you may not have heard before is:

The ability to be able to create BOTS.

Ebola for Systems: biological or cyber

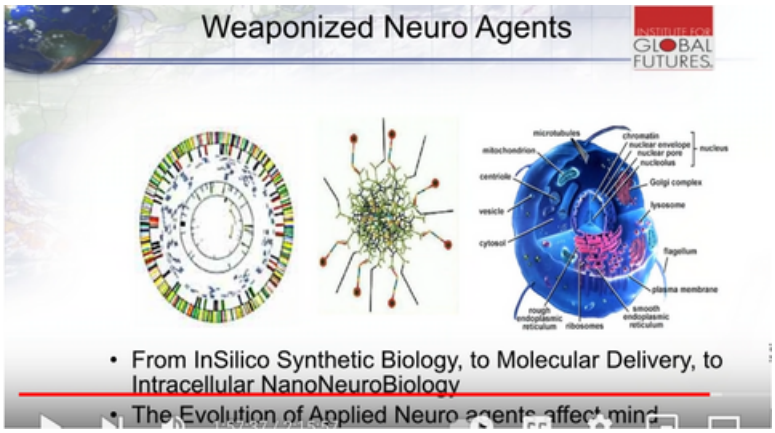
I mentioned that earlier, blend it with AI, with sensors and networks is something that we haven't talked about.

That the ability to be able to deliver these devices that we think that were used, either externally to the habitats, where the subjects were targeted, or <u>it may be in you!</u>

You know internally. But we haven't talked about whether you know there could be other kinds of devices such as:

- **Fly balls: M2 EQUITYBITES-October 3, 2018-HELIPELLER unveils Flyball quadrotor manned vehicle**
  <u>HELIPELLER unveils Flyball quadrotor</u>
- **Drones [or flyballs and drones that were tied to other] sensors or**
- **Sensors that are hackable**
- **Hackable health device**

Remember: Everything is a Hackable!



Routers We're living in an era where everything is hackable.

I bet a large portion of the folks listening to this have such devices in their home. We have some experts here that can attest to this.

That most devices are now networkable and are hackable and <u>neural hackable</u>.

We have developed:

Devices to adjust or refresh memories

which we will have at the nano scale. You don't even need them at the micro-scale.

We are going to end up where everything that can be made, can be hacked.

It's narrower hacking, is an area that we don't even have people really thinking about yet, because we don't have all the devices yet. But that's where we are going.

That is part of the story that we're learning today.

Slightly weaponized neuro-agents.

There is this car heading towards us with our bad guy. Actors here, you know, for all intents and purposes, that we are in the era of nano, neurobiology, synthetic biology, and molecular delivery.

You know, the ability to deliver these days, it doesn't have to be that sophisticated.

We have had two events with the use of neurotoxins, that should show us one part of the continuum, a kind of crude weapons. And they are clearly weapons. Right?

The neuro-agent against the Russian in Europe and against other targets. That was purposeful.

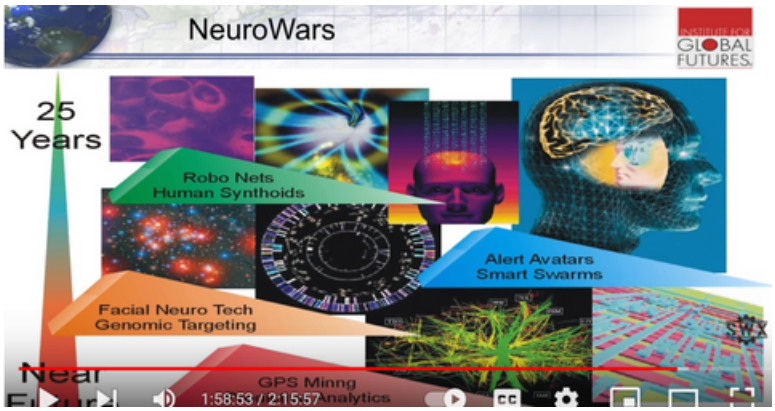
Then we've had another example of the agent, used to inflict insulting mortality, in Asia, against North Korean, resident.

For all intents and purposes, you are now talking about the crude part of the neuro-supply-chain. This is a more sophisticated, non-lethal part, of the supply-chain for neuro- weapons.

I would forecast that there is going to be a lot more talk about that, but it does not need to be as sophisticated.

Again, we don't have to prosecute this, but in the modeling where it can be done.

Neuro Wars



For this conference on neuro-technology, that neuro-war, and the implications of neuro technology that we modeled out in a variety of things of which we've done.

Since 2014 about half of these are now deliverable as capabilities.

We now make a transition, from talking about- really a kind of an overview of technologies and drilling down on neuro technology. I want to talk a little bit about, then, the other complimentary side.

Supply Chain of the Dark Global Networks

You know who a potential ally is that might be interested in doing this. So, this is a body work that I had developed when I was advising SOCOM.

Bad Guy Hunting or Targeting. I came up with this concept of Dark Networks.

Dark networks are a criminal terrorist- sometimes sovereigns, who work together in a supply chain to be able to:

- **Create**
- **Plan**

- **Implement**
- **Deliver**

In these global dark networks what has kind of evolved, is that there are a variety of:

- **Actors**
- **Rogue states**
- **Radicals**
- **Non-states criminals**

who are involved in a variety of parts of a supply chain that you need to be able to make stuff deploy.

They have access to "stuff" and produce Disruption and Conflict

- **You must have banking**
- **You have got to have logistics**
- **You have got to have things to trade that are non-monetary**
- **You need to have crypto. Where is our crypto so far? There is call to the world for crypto currencies.**
- **You have to have the ability to be able to have other monetary forms to support your operation that are non-transferable.**
- **You need to know the trends that are discoverable**
- **You need to have a complete knowledge of the supply chain**

Think about it!

You know Walmart has a supply chain? Right? They grow stuff and make stuff all over the world and they figure out where to ship it to.

They figure in assembly for the best taxes, and which monetary unit to use, where to deliver to what markets, or where it's a supply chain.

So, dark networks have supply chains that include criminal terrorist and sovereigns. The actors have supply chains. If you are in the Bad, Guy Hunting business, you know they have got a budget to follow, You also kow they eed a supply chain.

Who are the Bad Actors?

- **You need Logistics to follow the customers.**

- **You need to follow the Producers.**
- **When we start, to then apply that thinking about the application to you.**
- **You know who are the potential bad actors are that would do this and why.**

Now you have an interesting model.

I built this model around what I've used before- but you know where you start.

********Also, look at what does the literature indicate regarding who might be interested.**

Russian War

The Russian view of modern warfare is based on the idea that the main battle space is the mind.

Interestingly, remember I said earlier about the supply chain around Neuro-Technology?

Blunt Tools

You have got one end blunt; you have blunt tools- right, use neurotoxins to take out parties.

Subtle Tools

You got more subte tools which are information warfare. Right?

Aggressive Penetration Tools

Now we've got more aggressive stuff:

- **Penetration of Elections**
- **Fake News**
- **Fake Identities, and all that.**

Non-Attributable Phenomena

And then, you've got this even subtler kind of non-attributable phenomena, which are like these incursions in Asia and Cuba. It is part of the same thing. You might add to that, because you know Syria and other folks, that are using neuro agents.

Again, I want you to start thinking about these as supply chains with ecosystems of involvement.

Let us take a look at this bad guy hunting threat analysis. I am working with a couple of other folks in

this area.

One, it's sensing about that guy hunting. I am not going to go through all them, but will prosecute a couple of them, so that the threat analysis basically cuts around:

- **Who**
- **What**
- **Where**
- **How**
- **Why not**

Hard to figure out? Right? That's why we are looking at Identity Analysis.

You know what this is- it's an agent - a device.

I think it's important as a takeaway that you know if this is not an accident or some happenstance.

- **This is a directed**
- **It was Purposeful**
- **Targeted at a population that are American officials**

I understand there may be other officials from other friendly nations, but for all intents and purposes, this is a capability analysis that's been:

- **Deployed**
- **Targeted**
- **Chosen**

Who benefits? Who are the winners and losers?

Who Benefits?

The first order of benefits are the folks that are perpetrating this. <u>What are they doing is demonstrating their capability.</u>

Why would that be useful, and who would benefit from that?

What is useful to be able to determine what the impact is, and what was the impact?

Confirm our objectives. This is a clinical trial in the wild on humans.

The second order of that, is against whom?

That is very valuable, the who.

That is a short list of people that would sponsor that, and maybe they didn't sponsor it, but maybe it's bad actors or rogues who are basically interested in advertising their capabilities.

I need to talk about more about the vendor supply chain. The vendor part of that is very interesting.

OPERATION PEST CONTROL

Today, I can find similar pest control devices in Baghdad and over the Internet.

I ran an operation where I was putting together what I needed for a drone delivery.

I picked up the internet and found four or five places throughout Baghdad, Iraq, Afghanistan, Paris, Marseille to put together an order.

Nobody ever asked me why I wanted the drone service.

I could find pest control devices and a variety of other technologies, that are clearly available, and I can ship them via FedEx, maybe even buy them on Amazon and have them delivered.

Vendor and supply chains, with variable ideological or profit research are likely to profit from this.

Things as ecosystems of interacting and related folks don't be don't be fooled by ideologies.

80% of the bad guys are doing it for some kind of profit during the game.

I mean the fuel that drives Isis is the oil. It is a commercial enterprise- the Taliban.

Also, number six is interesting geopolitical signaling and payback what has occurred recently, in terms of you know what.

Look at the short list of trade sanctions that are currently deployed against the short list. Look at the list again.

Is there a geopolitical payback, of which this event might be related to or implicated from the short list for major countries?

It is not hard to figure out rogue, sovereign dark networks.

We like to you know that we spend a lot of time trying to figure out, is it They do not know and yet they are playing.

So at the end of the day, likely this event is a contractor looking for business.

It wants to prove up a capability.

And you got to think, wait a minute.

Cuba is kind of a backwater. We don't really have an embassy there per se.

You know in China, given the treaties associated with this, and the target of the population, So wait a minute, so...in some ways who does that eliminate?

Then you start to ask yourself....

Who would benefit from trying to China being embarrassed with this insult occurring? Where they are responsible based on the treaties against Americans.

That is a shorter list or it could get more complicated. Because you've got what I call fractured sovereign scenario.

It's likely if you look at the incursion in India, back in the day of Mumbai, that was an advertising for another for a capability, that was deployed someplace else in the world.

So you got to think geopolitical in terms.

You know: What are the largest cities?

What do those supply chains look like?

Don't look at me over here.

I'm going to try something over here, but I'm really interested in showing this capability for something else.

Think about it like the history of comparable events for analogous deployments like cyber.

Then you think, could neuro end up looking like cyber? The answer is yes.

It is a proven up model.

In fact, a product line extension from cyber would be neuro, why not?

Hey, we've done great with cyber and turns a profit.

Now we've got a new capability who wants to sign up prove up the capability?

The commercialization of more than ideologogies here.

Just two possible scenarios, and then I will move forward.

Fragmented sovereign. They are most countries that have a variety of you know warring factions that have different perspectives in political, economic, and for various reasons these competing forces in regions and nations produce what we call Sovereign Scenario.

This scenerio says your bad guys basically have implemented this.

We are talking about this new incursion because they are trying to accomplish something else.

You got to think three steps ahead.

Well they do this, to be able to engage this, to get people busy over there, and they're really interested in something over here the fragmented Sovereign.

Fragmented Sovereign is <u>terrorist clinical trial</u> these are pretty self-explanatory.

I would bet on this, as rogue actor practice, this is a messy clinical trial because they get to do what they get to do,.

Then they have the Americans, who have the best research, and go ahead and do analysis.

America brings in the best doctors.

They do what open democracy does,and publish all the data.

They do the hard work for us thank you very much.

Now we now, and what's better than the Americans to be able to analyze this?

Because, you can't find any Chinese reports.

I have seen no Chinese data and very few Chinese reports.

No pest control reports-you know.

Chinese denials.

I'll give you the profile of a bad actor who understands what:

- **He understands social media and information warfare**
- **Clearly wants to advertise this capability**
- **He wants to embarrass the Chinese or at least put them in place or play**
- **He is attacking a select group of State Department officials that have functions in two nations.**

Now who's on that list?

That would be the shortlist.

Do the math on that. Ensure you check the Dark Networks.

This was a show of force.

A criminal terrorist organization.

That again, they'd only do, because of a commercial enterprise.

We are at the beginning of a neuro technology, being now incorporated into this kind of hybrid conflict era.

You should recognize it.

I would suggest that we are looking, potentially at additional instances.

Why? Because this has been so effective.

Americans played their part as the host country.

Played with a lot of good data.

They are getting more data.

Are we getting more data on Cuba?

We do not know where the next target is.

We know it is not going away because it's been an effective trial.

But it now revealing as a deployment. Of course, the insult is that we're not talking about rocket science.

We are not deploying some laser quantum fusion cannon.

It is not like super sophisticated technology which makes it more interesting.

Future Neuro Tech

I said earlier the two parts of neuro technology are:

The <u>soft part</u>, for all intents and purposes, is cognitive dysfunction that you would be able to deliver ...a deliverable, as a cognitive dysfunction to impact decision-making operations, negotiations, communications.

That is a big deal.

The <u>hard part</u> is, the interested parties in the design of this weapon is to kill or maim.

I think it's parties who are likely officials, are not folks, that are going to be able to go back in the game.

So, you got to think about that as a kind of a long-term impact and the risk factor.

Could there be additional locations?

Is it possible we could be looking at super drones that could deliver this in terms of capability?

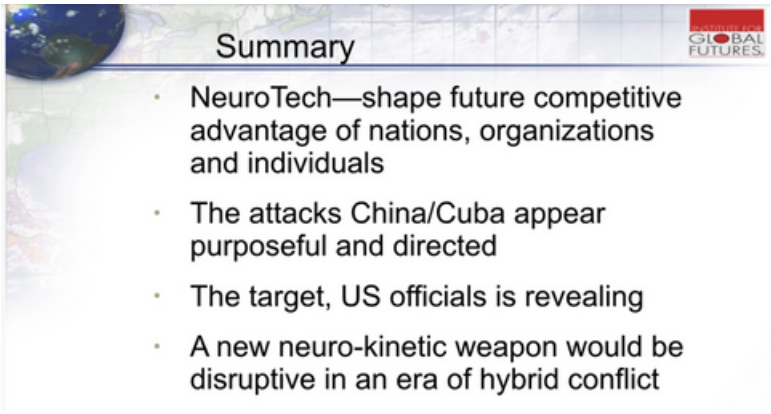
- **We haven't looked at it, but yeah it's a deliverable**
- **It is episodic**
- **It is acute**
- **It is here and It is gone.**

- **It's deliverable from various levels (scalable).**

There are questions about the ability to be able to deliver echolocation and these to target of things from 35,000 feet or 5,000 feet. We don't know the answer to that.

But there are devices that give us capabilities and again shrinking stuff down.

Summary



In summary, let me just say to you, one newer technology is here.

It is going likely shape the competitive advantage of :

- **Nations**
- **Organizations**
- **Individuals**

and that's for the good, bad, and ugly. So let's get on with this.

That the attacks in China and Cuba appear to be purposeful and directed at a population- that by the way could be expanded, to target US officials is revealing in itself.

There have been no other instances, similar to this pathology, anywhere else that were aware of.

Somebody is sending a clear geopolitical message.

It is a bad actor.

Whether they're in alignment with other Sovereigns who had gained from this other Sovereigns?

Again is a short list.

But it's clearly signaling a geopolitical signal.

There is a communication going on using a new neuro kinetic weapon will be disruptive in an era of hybrid conflict.

We have to assume that we are in that new era, and that new era purports that we have to have find a way to deter prevent and detect

Thank you.

Celeste Solum is a broadcaster, author, former government, organic farmer and is trained in nursing and environmental medicine. Celeste chronicles the space and earth conditions that trigger the rise and fall of modern & ancient civilizations, calendars, and volatile economies. Cycles are converging, all pointing to a cataclysmic period between 2020 to 2050 in what many scientists believe is an Extinction Level Event.

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