

Dr. James Giordano – From DARPA Mind Weapon Tools, to Nanotechnology | Hacking Our Mind is the Ultimate Agenda

“The Brain is the Battlefield of the Future” [Full Transcript]



Many may have seen Dr. James Giordano’s “The Brain is the Battlefield of the Future” 2018 presentation already, but as of yet, I have not seen a transcript of this particular lecture. It is incredibly pertinent, and is perhaps the key reason why there is a nationwide effort to vaccinate absolutely every person on the planet.

There will be, of course, those who would consider any talk of “brain/mind control/nanotechnology” as a ridiculous conspiracy theory that has no basis in reality.

Yet Dr. James Giordano has based his entire career on this endeavor, and is a very real agenda of some of the most prominent government and research organizations worldwide.

While Dr. Giordano's lecture encompasses a wide range of extremely important and mind-boggling (no pun intended) information, I have highlighted a few aspects from his presentation that espouses incredibly topical information in order for the public to realize what the main goals are of these institutions.

Dr. Giordano gave this presentation in 2018, and I heard the video in 2020. At the time I viewed the video we were in the early stages of the Covid plandemic. Being a lone researcher, I deal with information overload. The volume of a single day's work is enough to break anyone's memory. I save everything of relevance or importance but a week or two later I struggle to locate an important piece for sharing. On Saturday, July 9th, the video was aired on Mike Adam's Brighton site in a discussion between Karen Kingston and a Christian news site host.

Dr. Giordano's video presentation was given on October 19, 2018 and it is entitled "*The Brain is the Battleground of the Future*". It was delivered to the Modern War Institute at West Point as I recall and what follows is the complete transcript of what is planned for the future. If you had any doubts that our own government is interested in your future, you are sadly deceived. Dr. James Giordano is affiliated with Georgetown University, the Vatican's headquarters in the U.S.

As someone with 40 years of experience in neuroscience and prestigious credentials/history of working with DARPA/Pentagon, brain science/interfaces technologies, "neuroethics", etc., Dr. Giordano lays out their agenda in this one hour presentation; no efforts to sugar-coat, hide or discreetly allude their motives.

For those who don't believe that brain manipulation/mind control is a real endeavor, this single presentation lays that speculation/disbelief to rest. It is not a "conspiracy theory". It is a cold, hard fact.

The full transcript of his presentation is transcribed below. Some embellishment has been added for emphasis.

Index for certain topics:

- [Weaponized neuro-cognitive science / Weapons of Mass Destruction and Disruption \(and Influence\)](#)**
- [Agenda to affect free will](#)**
- ["- if in fact I understand how it is that your brain does what your brain does, I may be able to access your brain and affect your brain, indirectly and directly."](#)**
- [Assess, Access, Affect the Brain](#)**
- [Brain science for warfare intelligence already in operational play](#)**

- Interventional technologies, including: Directed Energy Devices, Novel Pharmaceuticals, Nanoneurotechnologicals
- How to influence the attitudes, beliefs, thoughts, emotions, activities, and vulnerabilities of individuals
- Genetics, biomarkers and information database for tracking/surveillance
- Psychological operations (psyops) to influence behavior and emotions of individuals, groups, and populations
- Dr. Giordano mentions Havana (Havana Syndrome) as a possible Directed Energy Weapon Neural attack
- DARPA program to implant brain machine networks
- DARPA's program, Neural Narratives, to influence individuals/groups through psyops and propaganda
- Manipulating bio-data as a potential weapon
- Efforts to use drugs and nano/neurotechnology to “enhance” military warfighters/personnel
- Dual-use: “Medical purposes that are then depurposed in medicine and used for other agenda”
- Initiatives against potential dissidents/opposition
- Gene-editing a virus to make it more deadly and/or to cause worldwide panic to disrupt a nation(s)/population
- Controllable nanomaterials that can be aerosolized to infiltrate the biological system up to the neural membrane
- Drugs, bugs(viruses) and toxins can be developed “under the radar” if classified as Weapons of Mass Disruption
- Ethical posturing...
- “- advancements in medicine very often arise as a consequence of the possible utility of various forms of science and tech to be weaponized and the damage that they incur”
- Brave New World

– MKUltra (mind control) to alter the cognition, emotions and behavior of individuals (using psychedelic drugs)

– Using transcranial devices (magnetic/electric stimulation) / and engaging brain substrates, nodes, networks through the use of pharmaceuticals

Source: odysee | Hall of Truth | The Brain is the Battlefield of the Future – Dr. James Giordano

Introduction Speaker: “Good afternoon and thank you for coming. Today’s MWI speaker event with Dr. James Giordano.

Dr. Giordano is a professor in the Department of Neurology and Biochemistry, Chief in Neuroethics Studies Program of the Pelligrino Center for Clinical Bioethics, and Co-director of the O’Neill-Pellegrino Program in Brain Science and Global Health Law and Policy at Georgetown University Medical Center.

As well, Dr. Giordano currently serves an appointed member of the United States Department of Health and Human Services Secretary Advisory Council on Human Research Protections.

He is a researcher and task leader of the European Union Human Brain Project and has served as an appointed member of the Neuroethics Legal and Social Issues Advisory Panel of the Defense Advanced Research Projects Agency (DARPA) and Senior Advisory Fellow of the Strategic Multi-layer Assessment Branch of the joint staff of the Pentagon. It’s quite a bit.

In his spare time, he has authored over 260 publications in neuroscience and neuroethics, seven books and 13 government white papers on neurotechnology ethics and biosecurity. And is an editor-in-chief of the International Journal of Philosophy Ethics and Humanities in Medicine.

Dr. Giordano, thank you for joining us today.”

James Giordano @1:26: “No, no. Don’t applaud now. Wait until the end. Because the performance pressure is much too severe if you do that. **And my thought is you’re probably not going to applaud at the end, but what I’m gonna hear is the slamming shut of your sphincters with fear. That’s good. That’s been successful.**

It’s a pleasure to be here. It’s a real honor to be here. Is cadet Yoshi in the audience? Hello. No PDA’s but I do want you to come up and say hello. Your mother says hello. I’m just – everybody has a mother and I know hers.

So, what we’re here to talk about today is the fact that **the brain is and will be the 21st century battle scape in many ways. End of story.** We could stop it there and I can let you go back to your respective units and think about that for a while.

[@2:04]: But I'm here to tell you absolutely as much as there's a big old Tyrolean nose on this face that **you will encounter some form of neuro-cognitive science that has been weaponized not only in your military career, but in your personal and professional lives.** Irrespective of whether those two things coincide or not.

So the idea of the brain as the battlescape is very important, and more importantly is this other acronym that's up there which is **WMD Squared**. Please get used to this because this is going to be part of the idea of a regular warfare and ongoing military innovation in your careers.

Weapons of Mass Destruction and Disruption. Disruption and influence will be the key to creating pier capabilities and asymmetrical engagements. Let me say it again, it will be the key to creating pier capability in asymmetrical relations and engagements.

If we talk about what brain science is, let me just give you a little bit of brief background on this field that is now called neuroscience. As a titular field, as a named field, neuroscience has only been in existence for 40 years. I know that because I've been a neuroscientist for about 38 of those 40 years.

When I first applied to get into a program in neuroscience, there were only 4 neuroscience programs in the continental United States. Four.

Right now, at this particular point, there are well over 200 dedicated university and collegiate programs. Several programs at the junior college levels, several programs at the high school level and many many dozens of independent think tanks and philanthropic organizations solely devoted to brain sciences. That's just here in the United States.

Furthermore, what becomes critically important for you to understand is that brain science is not just a United States enterprise or effort, nor is it singularly an effort of the United States allies worldwide.

Increasingly it is becoming an international/multinational global and independently exercised event and endeavor. Which increases the capability of the brain sciences developed, not only new theories but have more sophisticated tools.

I like this slide a lot, because what it presents, few ladies and gentlemen, is a century – a century long history of brain science even before it was called neuroscience.

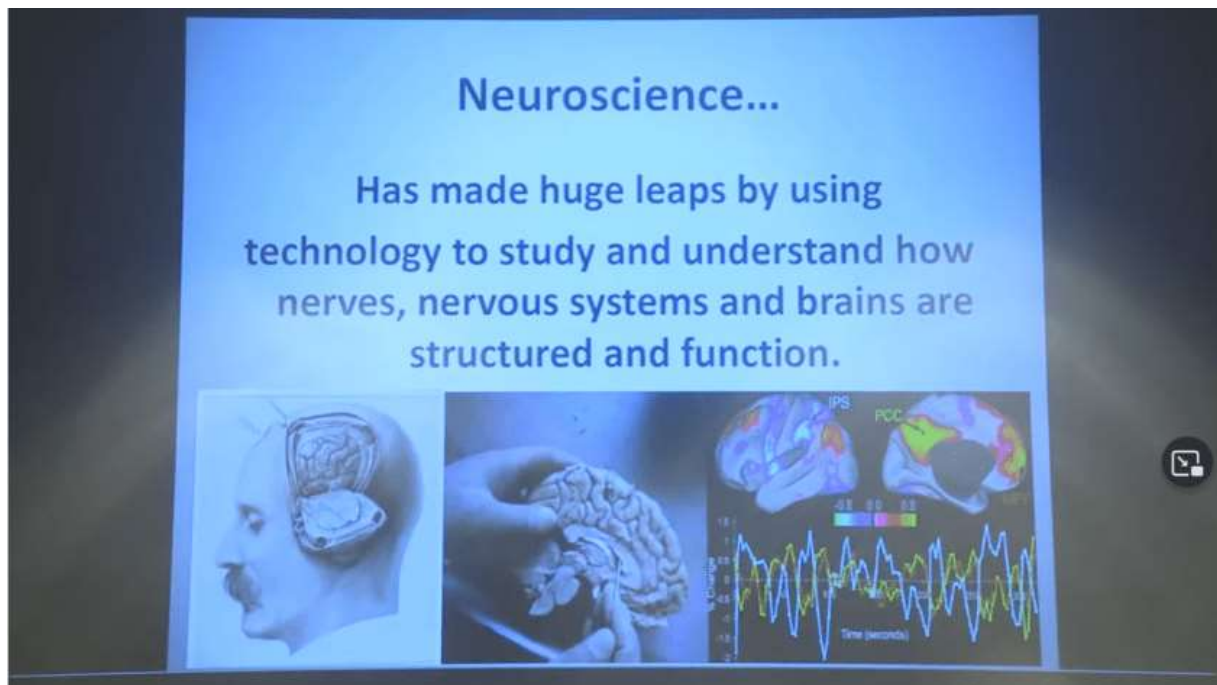


Image credited to Dr. James Giordano/MWI

James Giordano @4:06: "Look. Let's face it, for as long as human beings were looking in some reflective pool and recognized that that thing looking back at them was themselves, there was some interest in what makes me, me.

What makes me think, what makes me feel, what makes me behave the way I do and you behave and think the way you do. What is my sense of self? **Do I have free will, and what is the nature of that and how can we affect that?** In a variety of ways that go from the non-kinetic all the way to the kinetic?

If we take centenary jumps into the era of the Enlightenment, we can see the great thinkers that came before and during the Enlightenment, inclusive but not limited to people like Rene Descartes, pondered the idea of what that means. "*Cogito, ergo sum*". I think, therefore I am.

The inverse of the statement that in many cases was implicit but now becomes ever more explicit, is, what makes me think? And if I can understand what makes me think, and makes you think, and makes you feel, then that understanding may in fact flavor, if not directly influence the way you and I interact.

But more than that, **if in fact I understand how it is that your brain does what your brain does, I may be able to access your brain and affect your brain, indirectly and directly.**

And what this allows us to do is to create tremendous potential and possibility and probability, potential, possibility, and probability of what the brain sciences can do and will do."

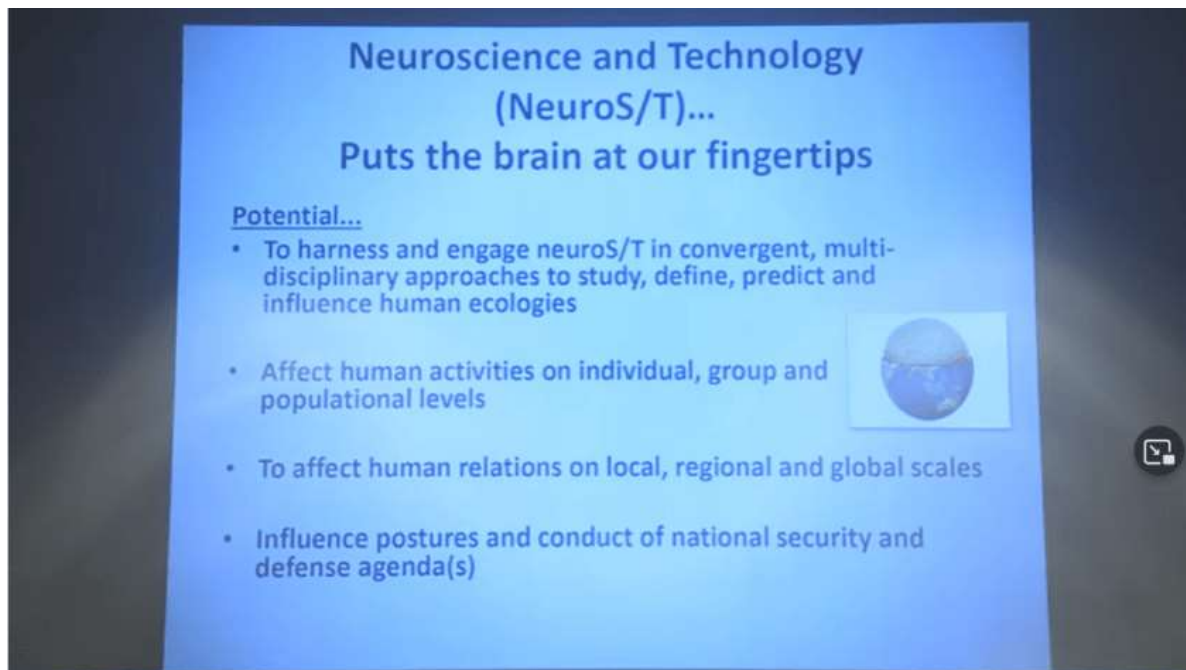


Image credited to Dr. James Giordano/MWI

SLIDE TEXT:

Neuro Science and Technology

(NeuroS/T)...

Puts the brain at our fingertips

Potential...

To harness and engage neuroS/T in convergent, multi-disciplinary approaches to study, define, predict and influence human ecologies

Affect human activities on individual, group and populational levels

To affect human relations on local, regional and global scales

Influence postures and conduct of national security and defense agenda(s)

James Giordano @5:29: "Remember these three letters: A, A, and A. Keep them as your viable mantra for the duration of this course today and throughout your professional careers and each and all the opportunities that you have to interface and try to understand the power that the brain and cognitive sciences can yield.

A: the ability to assess the brain and its functions.

A: the ability to access the brain on a variety of levels, from the subcellular all the way to the social.

And

A: the ability to affect that brains and the individuals in which those brains are embodied and the ecologies in which those individuals enact, engage, encounter – from the level of the individual, to the group, to the community, to the populational.

Look at the power that understanding tools and techniques the brain sciences afford. It's there before you on the screen.

Obviously, if in fact this gives me some insight to the way people interact, inclusive of the way they may interact in bellicose, aggressive, violent and volatile ways, and it also confers upon me certain powers to be able to influence that, alter that, change that, mitigate that – then clearly I'm able to use the brain sciences as we have tried repeatedly in the past to influence the postures and capabilities; not only of our own individuals, who are engaged in warfare intelligence and national security operations, but those who seek to threaten us. In other words, we can utilize these things in national security, intelligence and defense.

Please look at the timeline. A mere 10 years ago, 2008, the National Academy of Sciences National Research Council convened a group to create a report dedicated to if and why and how brain sciences might be viable, valid and of value in national security, intelligence and defense operations. And in 2008, they did a 5-year retrospective and came to the conclusion that although these things may be valid, their relative viability value at that particular time rendered them not ready for primetime play.

Our group, working with others internationally inclusive of the Nuffield Council in the UK, proceeded forward from 2008 and did a slightly deeper dive; looking at international capabilities, limitations, and de-limitations in the brain sciences and came to a very very different set of conclusions.

Not only were the brain sciences increasingly being considered, interested and used for possibilities of national security, intelligence and defense, but they would continue to be so as more and more countries internationally developed the capabilities and the specialized agendas to be able to look into the brain and affect the brain.

So much so, that by 2014, the exact same committee reconvened and recognized at that time that the brain science is indeed were ready and in operational primetime for warfare intelligence and national security agenda. In other words, it is valid, valuable, and already in operational play.

The brain is the current and future battle space. Or at least one that can be leveraged in those ways to be able to create tremendous effect with fairly little investment of engagement.

In other words, what it allows us to do, is assess the brain, access the brain, and affect the brain. I'll unapologetically repeat myself throughout this lecture to drive home this point with regard to these capabilities, because each and all have gravitas importance and operational leverage ability.

That said, what are these techniques and technologies that have rendered this capability, and if you will, geopolitical, military, and social power? Well, I have them here before you.”

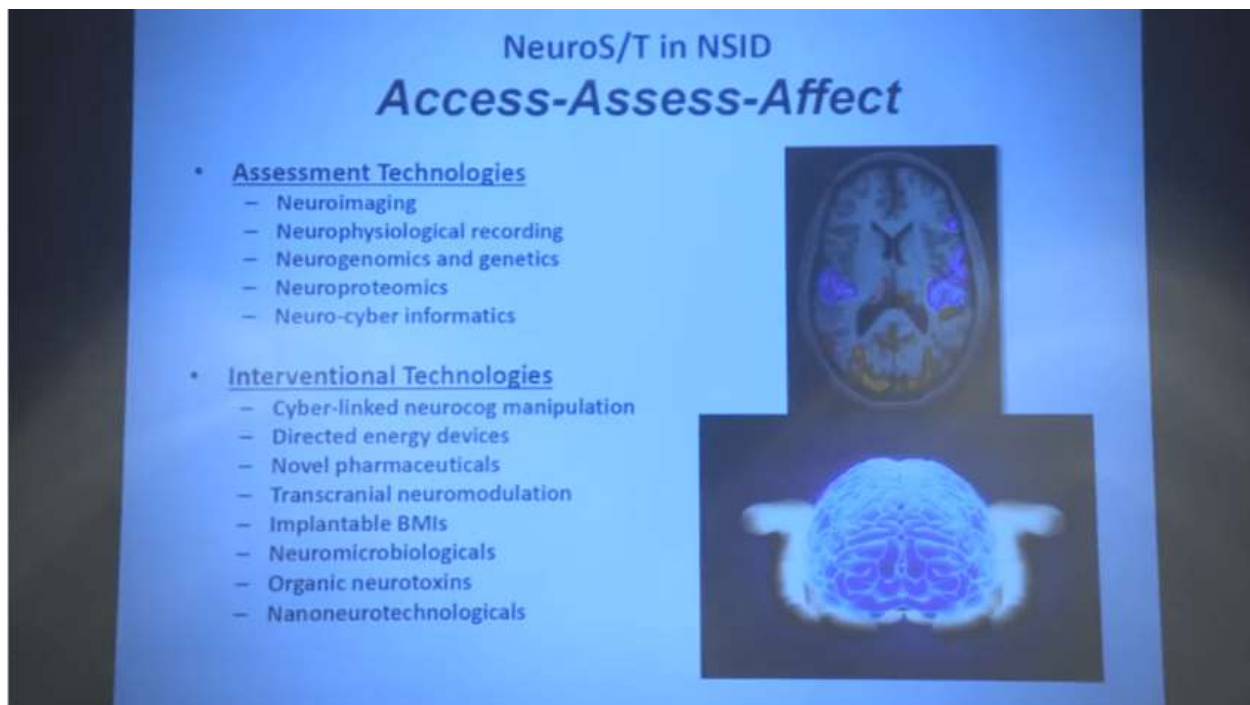


Image credited to Dr. James Giordano/MWI

SLIDE TEXT:

NeuroS/T in NSID

Access-Assess-Affect

- - **Assessment Technologies**
 - Neuroimaging
 - Neurophysiological recording
 - Neurogenomics and genetics
 - Neuroproteomics
 - Neuro-cyber informatics
 - **Interventional Technologies**
 - Cyber-linked neurocog manipulation
 - Directed energy devices
 - Novel pharmaceuticals
 - Transcranial neuromodulation

- Implantable BMIs
- Neuromicrobiologicals
- Organic Neurotoxins
- Nanoneurotechnologicals

James Giordano @9:07: “Generalization, we can parse them down into two discrete domains.

First, the assessment neuroethologies that do exactly as the name would imply. They are, based upon various tools that we can use to assess those structures and functions of the brain that may be involved in those process of cognition and motion behaviors.

Humans are tool users. Rarely, however, do we turn over a rock, look around the corner, appear under the bed, just to know what’s under there. We use, at very very least, the knowledge we have gained from turning the rock over and looking under the bed, around the corner, and very often those things that we find under the rock, under the bed, around the corner, become tools for us to use in a variety of other engagements. Brain science, like any other science and technology, is no different.

Earlier in the day at lunch, major and I had a conversation about the viability of different types of research. Science for science’s sake. Science just to know, because that’s where your interests lie.

Oh look, I’ve been in academic for well over 4 decades, and I can tell you that that kind of research is wonderful. But when that research is generated for a purpose and when it’s funded and when that purpose deals with those things that are near and dear to the health, survivability, flourishing and protection of kith and kin, then **that research is operational research that has an end goal of use.**

This is what this is about. It’s not just a question of trying to figure out what makes the brain tick and the way it’s built. It’s can we get in there to affect the ticking and tocking, and by affecting the way that brain is built and the way it functions, influence in ways that are kinetic and non-kinetic.

[@10:40]: The attitudes, beliefs, thoughts, emotions, activities, and relative vulnerabilities and predispositions of those individuals for whom both we are responsible, in terms of our own forces, perhaps to make them better, more insulated against injury, operationally protected and enhanced and those who may threaten us.

To do that, we need to intervene. So the other dimension of these neuro-technologies are **interventional neuro-technologies.**

Now, I’m not going to bring you down the rabbit hole into what each and all of these things do, because you don’t want to be a neuroscientist and I’m certainly not going to make you a neuroscientist in an hour. But I think it becomes important to dial into a little

bit more clarity and with further granularity what we're really talking about when we talk about these relative assessments and interventional technologies.

In the former case, probably the one that gives the most rise to both provocation and contention are various forms of neuro-imaging, the ability to image the living brain – **to be able to see what brain areas are differentially active as we engage in different thoughts, feelings, emotions, and tasks.** And to then correlate the interaction of those nodes and networks with discrete patterns that occur not only in individuals, but in groups of individuals.

In other words, if I can see how this gentleman brain worked, whether he's awake or falling asleep, **[addressing an audience member]** thought I catch ya, the idea there is that I can then understand – **[addressing audience member again]** I'm only kidding, I can only – I can understand better... **[addressing audience]** relax – can only understand better not only what makes him happy, agitated, engaged, or tired, but I can then in some way alter my discourse to be able to make him feel happier, more engaged, and less tired.

In so doing, I can take the information I have about the way a brain works, and I can put it to good use, practical use. Think about this. If I know what makes you tick as an individual, and I'm then able to generate patterns of how you as an individual relate to, are similar to, or different from other individuals, I may be able to then generate information that allows me to interact with you on ways that are more meaningful to our level of interaction. In other words, **the more I know about what makes you tick, the more my interactions can be geared with you to make you tick the way I want you to. The way I want you to.**

Obviously it takes some energy to put people into a big magnet and scan their brain. There's a whole bunch of things that are limitations of brain imaging. We recognize that. That's part of the mission. We seek to delimit those particular constraints and through the use of co-register different forms of neuroimaging; make it better.

Some of these forms of neuroimaging are fieldable. Operationalizable in field missions. Some of them are not. **We're seeking to make these things more operationalizable; not only for military medicine to assess individuals who may have incurred brain injury and/or the effects of brain injury, inclusive of things like PTSD and other forms of neuropsychiatric disorders, but also to understand better how it is that our individuals are able to think through certain situations, how their brains work, and be able to classify those individuals and perhaps specify the way we train them, then we sustain that training, then we maximize their performance.**

We can use other methods as well.

[@13:39]: Genetics. Biomarkers. And information. And that information is critical. One of the things you must learn, is **as military personnel, your demographic, biological, social and psychological information exists in your jacket and is in**

fact retrievable in real time. That information becomes ever more important as we try to understand the you-ness of you.

And the nature to classify that information, hold that information secure, doesn't only exist on the medical side with regard to your HIPAA records, but increasingly is becoming a concern for national security – when these large-scale big databases of brain structure and function physiology, biopsychosocial demographics, become ever more available and ever more relevant to what's making you tick, what's making you tock, what's making you strong, and what's making you vulnerable.

And the fact that **other nations inclusive of China, and Russia, are engaging in large-scale neuro big data initiatives to be able to create large-scale databases that can join not only imaging and physiological, but as well as other forms of phenotypic and genetic data, of the entirety of populations,** renders great power because there's great capability in that information to know where key points of strength and vulnerability may lie and also to intercede to inject information in to in some way be able to affect what appears to be your medical record/your personal record. The evidence that is you.

[@14:56]: And we can take that step to go one step further: **the more I know about you and the more I know about the way your brain works, as individuals, groups, communities, even populations,** the more I can utilize non-kinetic means, such as informational means of narratives, iconographies, semiotics, to **influence your emotions and your behaviors.**

We can do this subliminally through computer images, we can do this more liminally through the types of engagements, interactions that we engage the psychological operations and informational operations. We can train better our Human Terrain Teams to be able to interact with individuals and variety of cultures, groups, settings, and ecologies – to improve their performance, so as to be less distancing and more ameliorating.

We can go further than that as well. **We can also utilize these interventional technologies in those ways that may be able to directly affect the brain.** Probably the one that you've heard about most recently, most contemporously [sic] in the literature, is the possibility to use some form of **directed energy to affect physiology, peripherally and also to affect the physiology and health of the brain.**

Case in point, here, U.S. Embassy personnel here in Havana, and possibly in China. And of course, there's not a lot that I can tell you about that, although **I am one of the researchers on that particular project,** but this seems to be wholly indicative and supportive of the fact that this was at least some form of directed energy; whether it was wholly intentional or not still remains to be definitively decided.

However, the pattern of insult and injury to those individuals, and the **pattern of injury of who was affected, strongly suggests that this was an intentional and directed**

engagement, and that this represents a beta test. The possible probe of the **directed energy neural weapon**. And there are a **number of countries that had developed initiatives and agenda towards developing just these types of things; the United States included.**

But you'll also have a whole host of other things that can go bump and bang in your brain. The more we understand the specificity of the brain, on a very granular level, the more we're able to derive and **develop specific types of drugs that not only can enhance and optimize the performance of our people, but can also be used to mitigate, militate and in some cases, manifest profound morbid changes, in *their* [own] people. In other words, against the 'hostile other'. [what is considered a 'hostile other' according to the government...?]**

Drugs can be exceedingly specific, and as I'll show you in a moment, can be very much **used to individualize weaponology** in terms of what we call **precision pathology**, or precision effect.

[@17:15]: We can go further. Clearly one of the things we can also do is **transcranial neuromodulation. The idea of going through the skull to modulate the node network activity of the brain, to optimize the performance of key individuals in certain tasks and performances** that are relative to the missional space, and **we can also do that against hostile or perhaps belligerent others.**

We can go further to **implant certain brain machine interfaces**; these are many of the DARPA programs that you may hear of now. Probably the one that is most, most notorious, in a very good sense, is something called the N3 program, which is the **non-invasive neurosurgical/neuromodulation program** being run by their program manager Dr. Al Emondi. **The idea here is to put minimal-sized electrodes in a network within a brain through only minimal intervention to be able to read and write into the brain function in real-time. Remotely.** The United States is not alone in such efforts.

And then of course you also have the things a little bit more traditional. **If we talk about things that can be operable in the biochemical space, we ordinarily talk about drugs, bugs, toxins, and ever more we're considering devices.**

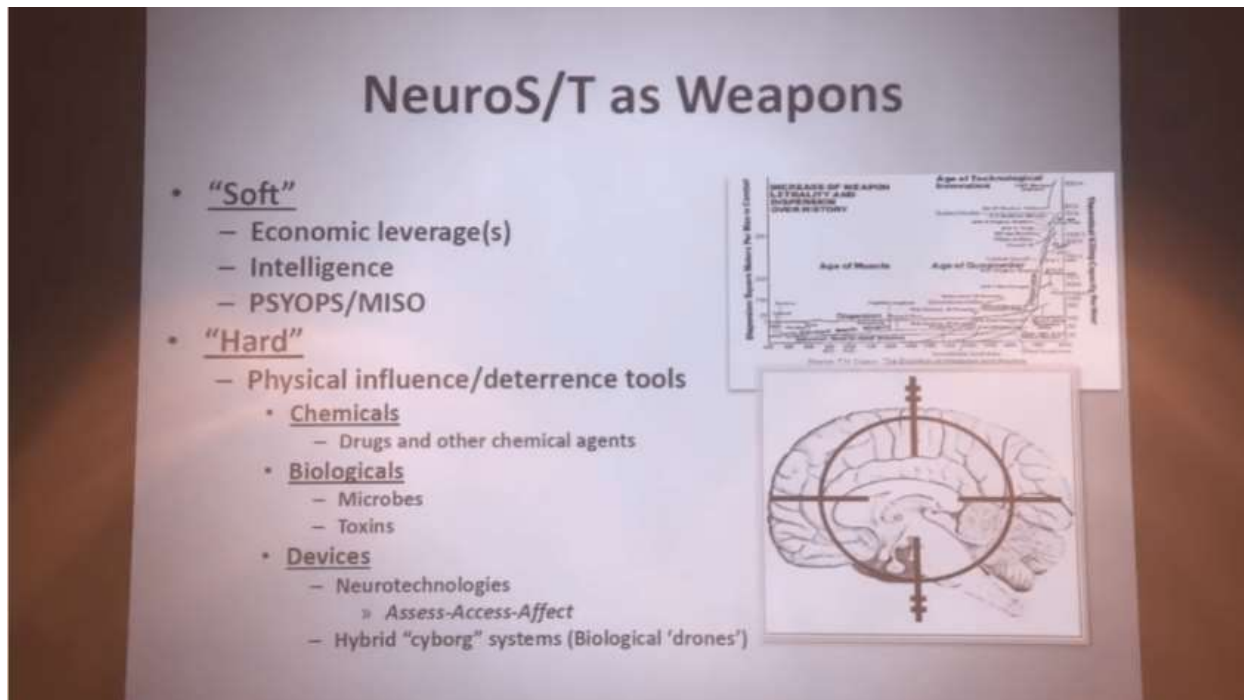
At the last Biological Toxins and Weapons Convention, the RevCon, it was then raised by the Australia group that we need to be a little bit more salient in our attention to those possible **neurotechnological devices that may be able to be weaponized**. Our group has also argued that the current considerations and extant categories of the Biological Toxins and Weapons Conventions are not detailed enough, to be able to appreciate or keep pace with the advances in this form of science that can be weaponized that poses a risk and threat on the battle space.

So how then, can we use these elements as weapons? Means of contending against others? Formal definition of a weapon, right under the Oxford Old English

Dictionary: 'means of contending against others'. And we can do that in a number of ways. **We can militate their behaviors and their thoughts in some ways as to make them more amenable to what we do.** The idea of positive weaponology. Or **we can in fact mitigate, and in some cases, completely nullify their capability, will, or engagement to fight.**

NeuroS/T as Weapons

- **“Soft”**
 - Economic leverage(s)
 - Intelligence
 - PSYOPS/MISO
- **“Hard”**
 - Physical influence/deterrence tools
 - **Chemicals**
 - Drugs and other chemical agents
 - **Biologicals**
 - Microbes
 - Toxins
 - **Devices**
 - Neurotechnologies
 - » *Assess-Access-Affect*
 - Hybrid “cyborg” systems (Biological ‘drones’)



The slide contains a bulleted list of weapon categories. To the right, there is a graph titled 'Lethality and Caseloads Over History' showing a sharp increase in lethality and caseloads starting around the Age of Enlightenment. Below the graph is a diagram of a human brain with a crosshair overlaid, symbolizing neurotechnology as a weapon.

Image credited to Dr. James Giordano/MWI

James Giordano @19:20: If we combine those two definitions into one, **what you find is those agents that will either change individual’s thoughts, vulnerabilities, volatility to violence and aggression, or incur morbidity, dysfunction, and/or mortality, in such a way as to then mitigate the engagement altogether.**

You still with me?

That said, we can break down any form of weaponology into two discrete categories: soft weapons, and hard weapons.

In the former categorization, soft weapons include, but are not limited to, such things like economic leveraging to create economics, market values, market presence, presence of international bargaining tables to develop international power and leverage, as a soft weapon.

Clearly the more we’re able to make an impact in a field, in a dimension, by virtue of research, medicine, technology, infiltration to a variety of areas of the public space, the more we’re able to yield economic strong-arming, economic leveraging.

I think an important consideration that I'll reiterate later in this particular lecture, is that there are countries outside the United States and/or the West, that are increasing their capabilities by intent in the brain sciences so as to be able to gain this type of economic leveraging and international global markets; in medicine, science technology, and the military. Most notably among them is China. We'll talk more about that momentarily.

We can also utilize weapons in a more of a soft approach, as I mentioned earlier. The more I know about what makes you tick, the more I might be able to do things like weaponize the approach that I then take towards you in my interactions and engagements with you.

[@20:50]: Here we can utilize the brain sciences for psychological operations. Most notably, one of the DARPA programs run by the case managing – by the program manager Bill Casebeer. Dr. Bill Casebeer, who subsequently went on to be a program manager at Lockheed Martin and run their brain machine interfacing programs. Bill Casebeer's program was called **Narrative Networks**, and one component of the Narrative Network's project was something called **Neural Narratives**.

If we understand how it is that brains and individuals, groups and populations respond to certain forms of imaging, memes, iconographies, engagements, **the more we may be able to tailor those things through our psychological operations, propaganda, MISO [Military Information Support Operations],** to be able to engage these individuals more positive ways or in **ways that are influential, to be able to direct their behaviors, their predispositions, and perhaps their engagements** with us on a variety of levels from the individual, **all the way up to the political.**

But then, of course, we move into the more harder forms of weapons; things such as, bullets and bombs. And here, once again, let me reiterate, we're talking about on the **neuro side, are drugs, bugs, toxins and devices.**

But of course if we spill over the idea of soft weaponology, into a hard weaponization, we also see **the use of bio data as a viable weapon. Manipulating bio data,** so that I can then put into your particular medical records, subtle information that may change the disposition of whether you're sick or not, change how you're treated. Influence the postures that go to you in terms of insurance, care, viability for military service. **By altering that information, by changing those data, by purloining those data, I essentially changed the "you" of you. And I can do that in very subtle and insidious ways.**

Furthermore, I can do that on a variety of different levels that can affect key individuals, so that in fact your medical record changes, so thereby render you incapable, or at least, invalid to be able to serve in a way of serving. Or I can do that on a much larger scale. Groups, populations. And if I change those data, I change the way you're being regarded and treated.

And I can do that in one of two ways. **I can do it in such a way that you're gonna be regarded in a negative sense, or I can do it in such a way that I'm going to treat you incorrectly. If I say, for example, do you have a particular allergy, or you have particular sensitivities, or you have a particular disorder, you will be treated for that. And that could then harm your health and your stability.** In both, a short wars approach, as well as a long wars approach.

But if we take a look at this in a little more detail, you can see that once again it falls back to the idea of **what can we do to ours and what can be done to others?**

[23:20]: Clearly, one dimension, one domain, of operational viability and value, is to enhance the capabilities of the combat and intelligence operator, across a range of scale abilities, in both general purpose and more select forces. And this is the idea of **neuro-enablement**. Neuro-enablement.

You will hear this referred to in a variety of different ways. **Performance optimization. Enhancement. Enablement. Maximization.** These terms means something.

A number of years ago our group was tasked with the Air Force to develop a lexicon, a nomenclature, that would be able to define these in more precise ways. I will not bore you with that now. But the idea of enablement gives forth a particular meaning that's relevant. You're enabling individuals to do some aspects of a performance of a task, that is germane and justified to their operational mission, and, that is in fact, done with regard to protection of their charges.

So in other words, we're saying, **'we're going to make you good to go and we've decided that this is good'**.

The reason this can become problematic, of course, is that, **what definition of 'good' are we using? When we define, whoever the proverbial "we" may be, to be good, might be quite different than what "they", whoever the proverbial "they" is.** And as a consequence, we have to keep a much broader window of opportunity and possibility open to be aware for the potential benefits, burns and risks that this type of engagement may pose.

What types of things can we do to make our people better, if you will? Well certainly **we can use a variety of advanced psychopharmacologics and neuropharmacologics. In other words, drugs.**

And, I refer you to a wonderful book written by a colleague of mine, Professor Jonathan Moreno, called Mind Wars. First edition came out in 2006, second edition came out in 2012, and Professor Moreno does a very good job in defining/explaining the history and historicity of the way the brain and cognitive sciences had been used in national security intelligence and defense operations. Both by the United States, and more globally.

And what we see is that this is certainly not a new event. We can look back into antiquity and see that there have been attempts to try to maximize the performance, capability, sustainability, and protection of those individuals who are operational war fighters. Literally from ancient Roman Greece all the way to the 20th and now 21st century.

It's the tools and techniques, based upon the understanding and depth that we have, that increases the granularity and specificity of effect, and increases the sophistication and gravitas of outcome.

The more we know about the brain, the more **we can develop ever more selective agents to affect the structures and functions of the brain and cognition, emotion and actions**, and the more we can do so in a way that's more like sharpshooting, rather than buckshotting.

But irrespectively, **drugs can be somewhat dirty**. What I mean by that is **they can have a host of adverse effects, some of them side effects, some of them direct effects**, and very often we'll find, is **unless we're able to deliver the drugs directly to a particular site in the brain or elsewhere in the nervous system, they can have heterogeneity of effects throughout the body**, and that can lead us to some undesirable outcomes.

But we don't need to be limited to drugs. No no no. We can also use a variety of computational brain machine interfaces that are both closed and open loop, and these include things like **transcranial magnetic and electrical stimulation, stimulating the vagus nerve transdermally**; or **if you wanted to get somewhat more invasive but certainly more specific, brain machine interfaces by virtue of deep brain and superficial brain implants**.

And I shall tell you, that one of the leading projects in developing state of the art brain implants, is a DARPA funded project aimed at the medical side for the treatment of neurological and neuropsychiatric spectrum disorders, and this program is called SUBNETS. Systems based neurotechnologies for emerging therapies.

[27:02]: But what you also need to appreciate is that **that DARPA program**, like any program that is oriented towards engaging brain function to then alter those functions in certain ways, directional ways, **can be harnessed for what's called dual-use. Medical purposes that are then depurposed in medicine and used for other agenda**; inclusive of warfighter enablement and enhancement.

Furthermore, we understand that there are a number of nations outside the United States, some of whom are allied, others that are at least competitive, if not combative, that are engaged in these types of programs looking at the capability for transcranial and deep intracranial modulation of brain function, to improve the functional performance of military and intelligence operators across a range of viable missional tasks.

We are not alone in these pursuits. And I think that's something that needs to be appreciated.

But it's not just a question of what we can do to our own. Because very often, in raising these questions, we tend to, what I call 'err' on the side of moral probity, and we recognize that there are particular limitations, limits, boundaries, thresholds, that cannot and perhaps should not be crossed, in terms of what we can do.

And if we intend to cross them, we only cross them with consent and that consent is highly contingent upon the necessity of a continuity of research and clinical care. Understanding what happens to the individual once they've been enabled and enhanced, and what may happen when they're no longer enabled and enhanced. In other words, more colloquially, when Superman goes back to being Clark Kent, what happens to Clark, becomes the burden obligation of our responsibility.

However, those ethics are not homogeneous on the world stage. And **the idea of pushing the envelope of what can be done** to the combat warfighter and intelligence operator, and perhaps more broadly, **to those individuals who may oppose particular regimes, and/or maybe military fighters against your own regime**, is very often bounded by, and in some cases, deconstructed, by philosophies, cultures and ethics of those individuals who may be competitive, if not combative to us. **So in other words, this can also be weaponized against others.**

And this is where we get into the idea of novel neural weapons. Once again, this is not necessarily new, but the momentum of this dimension of the field has accelerated as a consequence of increased understanding of the brain, increased capability to develop tools and techniques to access and affect the brain.

So what are we seeing here? Well, take a look."

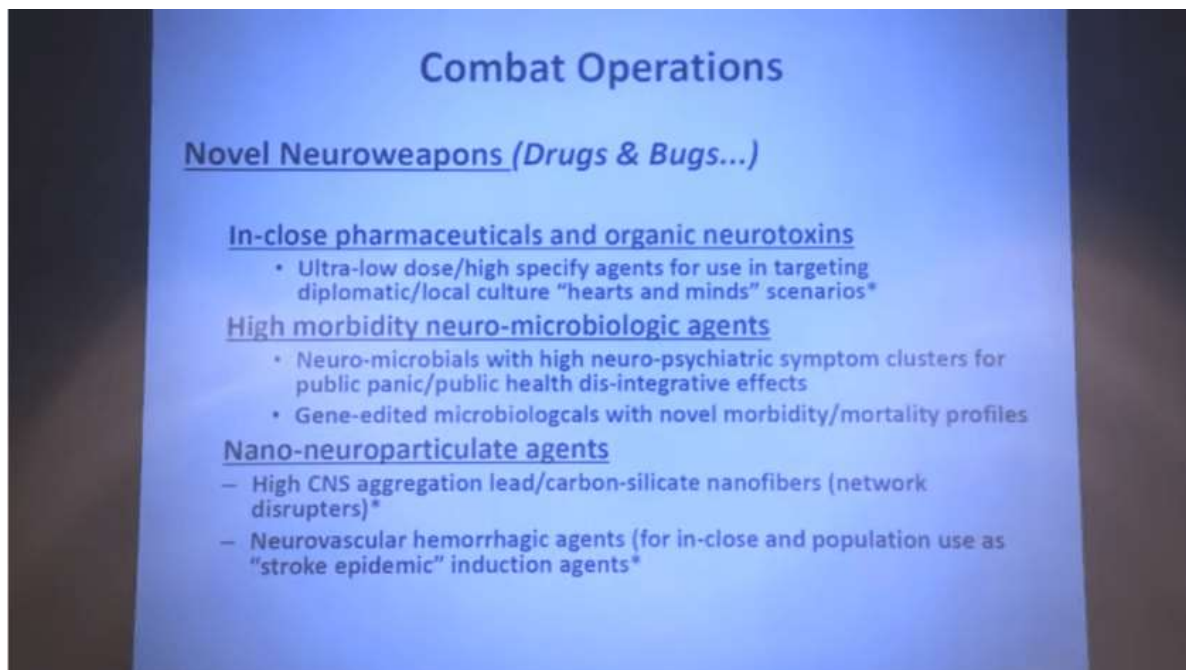


Image credited to Dr. James Giordano/MWI

SLIDE TEXT:

Combat Operations

Novel Neuroweapons (Drugs & Bugs...)

In-close pharmaceuticals and organic neurotoxins

Ultra-low dose/high specificity agents for use in targeting diplomatic/local culture “hearts and minds” scenarios*

High morbidity neuro-microbiologic agents

Neuro-microbials with high neuro-psychiatric symptom clusters for public panic/public health dis-integrative effects

Gene-edited microbiologicals [sic] with novel morbidity/mortality profiles

Nano-neuroparticulate agents

- High CNS aggregation lead/carbon-silicate nanofibers (network disrupters)*
- Neurovascular hemorrhagic agents (for in-close and population use as “stroke epidemic” induction agents*)

James Giordano @29:20: “We see in-close neuropharmaceuticals and organic toxins. What’s new about this is the in-close nature of this. Increasingly we’re not seeing these things as weapons of mass destruction against growth aspects of the population. Although, certainly many neuroweapons, such as sarin gas and VX and other forms of neurotoxic agents can be leveraged against large groups of people, but that’s messy.

More specifically, perhaps, might be targeting individuals on a level that allows either direct attribution, or covert engagement with non-attribution. Let me give **an example** of what I mean.

So this gentleman is the leader of some group. A political group, a social group, a combative group, and under the available white flag, he and I announced to have some kind of caucus. A meeting. And during that meeting **what I do is I lace the rim of his drink, or his pen, or his seat, or something in his medium environment, with very very low dose drug or toxins that are going to affect his stability.**

They may affect the way his brain works, and as a consequence of that, they can affect the functions of his brain. His thought patterns, his relative emotionality, and the behaviors that go along with that.

One of two things might happen. He might be completely incapacitated as a consequence of this, or **he may change his level of capacity and engagement, so that he went into the meeting thinking, "I hate this guy. This guy's my enemy." He walks out of the meeting going, "I love this guy. This guy's great."** Now what could happen?

If, in fact, this is a gentleman who has charismatic, financial, elected, or dictatorial power, **it may be that his followers will then follow him blindly.** He came into the meeting as a leader of those followers, who were bellicose, were volatile, were violent and aggressive; **he comes out of the meeting, he tells them to change their behaviors, and they do.**

Or, I could sever the trust. By now he leaves this meeting, he's espousing a very different philosophical stance and orientation, and **his followers no longer adhere to his precepts, his tenets, or his lead.** And I fractured the relative arrangement of trust, engagement, capability, that he fostered; leaving that population disrupted and vulnerable to intervention. To a coup d'état. To a junta. To some type of insertive reassumption of leadership. You see how this can work.

Furthermore, I can use this very tactically. Some of these agents allow me to assemble the agent on site and not have to stockpile it. Which allows me to take the components of this agent into and out of a country, relatively covertly, target a specific individual, change or eliminate that individual with very little attribution and trace, and be able to leave prior to any attribution. Think, Novichok.

Or, I could assemble very small quantities of this that would then allow a specific intervention, characteristically in a place that would not allow such an intervention; think of the use of a derivative of VX, in an airport.

But I could do more than that. I could also incur much broader type of ripple effects. And one of the ways I could also do that, is with what's called high morbidity neuro-microbiologic agents. It's a real fancy way of saying neuro-bugs. But high morbidity

neuro-bugs. I may not want to kill a lot of people. In fact, arguably, I may assume what is sometimes referred to as the Sailor Malan mantra.

For those of you who may be fans, or students of military history, you may remember that Sailor Malan, Wing Commander Sailor Malan, was a South African who flew at the Royal Air Force during the Second World War. And he became well-known during the Battle of Britain, for shooting up German airplanes, but letting them limp home. Particularly bomber aircraft. And they would ask Sailor Malan, "Wing Commander, why didn't you shoot that plane down?" And his adage was simple.

Better to have that plane returned home, with wounded crew who are spitting up their lungs, one dead crewman that they had to attend to, and therefore divert their mission capability while in flight, than shoot them down. Because the psychological effect will be rippling and devastating. This is sometimes referred to as the Malan effect.

[@33:30]: What can I do? I can use a particular bug that I may be able to now *modify* through the use of gene-editing technique that is ubiquitously available and fairly easy to use, to take a bug that was previously relatively benign and non-pathogenic, and make that bug virulent. Pathogenic. Dangerous.

And then what could I do? I could introduce that bug in key sites. Des Moines. Seattle. Tampa. Newark. Houston. I get a few people sick. I do it on an airplane. Do it at an airport. Do it at a sporting event. Do it on Black Friday.

And then what I would do is I would take credit for that, but I want to make sure that at least part of the symptomatic constellation was not only neurological, was profoundly psychological. Agitation. Debilitation. Sweating. Stomach problems. Sleeplessness. Cardiac problems. Things that are very what we call top-down neurological in their effect. Brain to body and body to brain, in the bottom-up cascade.

Then what I would do is I would get on the internet, and I would put out over the internet, *"I did it. Oh yes. On that dangerous G group that you should all be afraid of. And in fact, this is far more ubiquitous than I let on. These are only the first cases. I've let these buggies go all over the country, and your early warning signs are agitation, anxiety, worry, sleeplessness, stomach problems, heart problems..."*

What have I done? I've rippled the sheets of the worried well. At first blush I get every hypochondriac running to their physician, but in second and third blush, I get those individuals who begin to become worried that they may have been exposed to this. That the children may have been exposed to this. That their loved ones, their kin, their kids may have been exposed to this.

Of course, the physicians, the CDC, the Public Health Service comes back on and says, oh no, that's not what's going on. But I get back on the internet and I say, *"Oh don't you listen to that. That's fake. That's false. Your government knows what's going on; they*

can't do anything about it and they can't treat you. They're going to end up quarantining you."

How many people would I need to affect? We modeled it. Somewhere between 12 and 240. What would be the effect? Hang on folks. Within 41 to 45 days, we would crash the United States Public Health System. Crash it. In so doing, I render the United States infrastructure vulnerable. Either there or elsewhere.

See the ripple effect? See the disruptive effect? I can disrupt an individual from the level of their cell, to their system, and disrupt individuals on a variety of levels, from individuals all the way up to the social fabric. And that social fabric may go even further. It may be geopolitical.

I need you to think, just for a moment, if you could, why would it be of any value at all, to affect, disrupt and disable individuals who are a U.S. Embassy personnel, in Havana? When did it happen? What was happening? What would be the benefit in fracturing a growing economic, political, and social trust in that part of the world? Who would benefit? What would be the long-term effects, for example, of at least indicating that U.S. Embassy personnel and foreign service personnel are vulnerable to these types of threats?

Could you impact – pair the threat with some type of condition stimulus, so now what you're able to do is to evoke a response in the worried well? I only offer possible suggestions for your speculation and your... consideration, if you will.

[@37:13]: We can even go further. One of the newest developments, is that nanoparticulate matter, can be stabilized for distribution. If you're not aware of what nanoparticulate matter is, it's that matter which exists on a scale of 1×10 to the minus ninth. Very very small. Smaller than a cell.

And we can manufacture materials that have discreet properties that can be controlled by virtue of bioengineering in their physical chemistry. To auto-aggregate, to be able to aggregate in particular areas based upon their biological and your chemical sensitivity.

But now we go one step further. Most recently, just a few weeks ago, it was announced you could then aerosolize nanomaterials.

And go one step further. I can create small robotic units. Controllable robotic units at the nano-scale, and that these, too, can be aerosolized, to create a nano-swarm of biopenetrable materials that you cannot see, that can penetrate all but the most robust, biochemical filters, that are able to integrate themselves through a variety of membranes, mucus membranes, and wherever – a mouth, nose, ears, eyes... Can be then uptaken into the vascular system to create clumping, can affect the vascular system of the brain, or can directly diffuse into the brain space, and these can be weaponized. And they can be done in such a level, that their presence is almost

impossible to detect, and as such, the attribution becomes exceedingly difficult to demonstrate.

How much of this material would I need? Take a look. This is the front of my pen. This amount of nanomaterial, if be able to maintain and sustain with regard to its deliverability and aerosolization, could, in fact, affect all of you. Or, based upon where I come from, New York City, all you'se.

Look at this. Look at this. I'm carrying that material. Would you see it? Would I have to lug a giant weapon into the room? No I wouldn't. And what if, in fact, I utilized some form of an unmanned aerial device, or unmanned ground devices delivery vehicle? Something like a drone? Or a bug? Could I do something with that?

But let's keep going. Could I also utilize a whole host of devices to be able to affect individuals close in, for example, during interrogations, during social engagements, during Human Terrain Team engagements... Or more remotely? In a room? In a theater? In an airplane? In a bus? In a store, in a mall? The answer is increasingly, yes. So this then represents for us both a challenge and an opportunity. The challenge is that increasingly what we find is that neuroscience and technology is relatively easy to obtain.

Many of the things that I've just spoken to you about are viable and obtainable directly to the consumer, or directly to the scientist. We also know that many of the products that are available direct-to-consumer can be easily modified to create things that have a much higher weaponization potential.

But more than that, we also recognize that there are dedicated efforts on the part of nations, states, and even groups of non-state actors and increasingly virtual nations that are using virtual currencies to fund research efforts in these areas.

I'd like to think that I'm a smart guy talking to a bunch of very intelligent individuals, but let's face it. We're not the only smart people in the world. And if we're thinking this way, there are plenty of other people who are thinking this way too. Some of them are our allies, some of them may be our competitors, and some of them are combatants and hostiles. And this is, in fact, the reality.

Furthermore, we recognize that the goal, particularly among the actions of the United States and her allies, is to fight for right and honor, but to keep our own honor clean. To take the moral high ground, if you will. And indeed, that has been the case in the majority of the United States engagements throughout our history.

However, one of the things that may creep up here is that there's something of an abrogation, a prohibition, a proscription, against engaging this type of research in its possible translation in the civilian sector.

You heard earlier in the very nice introduction that Captain Bender afforded me, that I've had the opportunity to work with the European Union Human Brain Project, specifically as a task-leader for dual-use brain science. And one of the considerations that grew out of that, was that absolutely none of those projects in the Human Brain Project, again a multinational effort, can and should be uptaken into warfare intelligence and national security agenda. That's viable enough.

The idea there is that these things should be used for only peaceful means. However, this also creates a challenge. And the challenge is simple. If, in fact, I choose not to train in particular ways, I choose not to train three days a week, if in fact those individuals who may choose to then conflict with me, will then train in the ways that I do not and train on the days of the week that I will not, they may opportunize a select advantage.

What do we do about that? Again, I think it becomes at least a problematic issue for discourse because we recognize it in many cases the civilian sector, not only is not amenable to engaging in this type of research, certainly, many are, but in some cases should not engage in this type of research for those very proscriptions that I alluded to momentarily.

However, the question then becomes, how do we appreciate the international challenge, risk and threat that the advancements of the brain sciences and cognitive sciences offer for global weaponization with the brain as the next battle scape?

Clearly it defines some type of a solution space and there have been those that have posited, myself included, that there should be more directed, more details, and more dedicated government efforts in this particular domain, so able to advance the brain sciences and ways with sustainable funding to understand what the potential risks and threats are, and to develop a stance of preparedness.

This becomes increasingly important. We take a look at those countries that have notable and identified programs of high level of investment of GDP and/or other levels of economic investment to advance the brain sciences in those ways that are either directly usable or have some, what I would call, explicit dual use capability.

An important consideration that I want you all to bear, is that current estimates based upon trend analysis, is that by 2025, greater than 50% of research development, test, evaluation, and possible use of brain sciences in general, will occur outside the West. Outside the West.

Furthermore, we understand that there has been a directed effort in China to be able to engage the current and 5 year plans, to be able to advance brain science in those ways, to be able to have a higher level of gravitas with regard to the research, its capability in its translation, in medicine, and other agenda; inclusive possible dual use in direct use within warfare intelligence and national security.

This creates opportunities for research tourism, medical tourism, and market capture. And again, that market capture can be leveraged as economic warfare in terms of being able to destabilize the global market and the global economics, that is relevant upon this form of bioscience and technology.

But we also recognize that these things are being used for military applications. Certainly there are directed opportunities and directed agendas for doing that within China. We also recognize that there have been activities and directed initiatives in the former Soviet Union that have now been translated and perpetuated into the current Russian infrastructure of biomedical science or military purposes.

And a number of other countries have directed efforts in this space, inclusive of Iran, North Korea, India, Bolivia, certainly among the U.S. and its allies. You recognize that. The United States, the U.K., Canada, Israel, and there are governmental efforts within Europe. We recognize also their efforts in Japan.

But there's another looming threat. The threat is the non-state actor. The threat is the virtual nation, to establish serenity within a serenity, so as to be able to say that we are immune or inured to your rules and regulations. Essentially, possibly destructive diaspora. And increasingly what we're seeing is the use of Bitcoin currencies and the like, allow the finances of these types of things to be sustained in ways that were heretofore economically unimaginable, if not incapable.

So as a consequence, what we're recognizing is that the threat parameters, the risk parameters, as well as the challenge and opportunity parameters, are growing.

We're equally concerned about the do-it-yourself community. Not because this community of biohackers represents an inherently malicious or nefarious group, but because of their relative vulnerability to infiltration. And we recognize that to such an extent that at present, the Federal Bureau of Investigation in this country has dedicated ongoing efforts to try to maintain continued communication, interaction and engagement with this community, so as to be able to better surveil their relative vulnerability to purloinment, infiltration, manipulation, and misuse.

[@46:09]: Clearly, if we're looking at these things as possible destructive weapons, the more characteristic or classic criteria of drugs, bugs, and toxins meet at least some of the extant categorizations of the biological toxins, weapons and chemical conventions.

However, as disruptive agents, as those agents that may be assembled, developed anew, that do not meet these criteria, you can then get skirting of these extant treaties, in these X and signatory documents, and as a consequence, can develop these means, these methods, tools and technologies, essentially, below the radar.

Moreover, as disruptive elements, they need not be mass-produced or stockpiled, but rather, their ingenuity is that they're able to be assembled in situ, in relatively low quantities, and used with specific effects against individuals and small groups, to be

able to incur disruptive effects; not only within that organism, or that group of organisms, but beyond the organismic level to the system's level, to the social level, to the geopolitical level. There's great power that can be leveraged there.

Clearly, what we can do, is provocative. Therefore what we should do remains at issue. Ladies and gentlemen, I do not have answers for you, but I will post several questions and possibilities.

One of the things we have to understand is that this represents, if you will, a bioscientific speedway. Consider the true speedway. Lots of entries. I've already shown you the entries. Very fast pace. The speed of translation from concept to construct in the brain science is about 60 calendar months, and increasingly that's being compressed.

So the developments in the brain sciences that reach a tech readiness level can be achieved within 48 calendar months. It's very fast. Certainly we know not only are there many entries, it's very fast, but the prizes are tremendous. Economic prizes, prizes of notoriety in the biomedical front, prizes of power, capability and weaponization on the wins front; weaponization, intelligence, national security front.

We also recognized that there were risks and possible harms. Not only to those who are on the track, but to those who surround it.

So the idea is if in fact we're going to move into this space, how can we move into the space with some prudence, how do we move into the space pragmatically, and how do we move into the space in such a way that is prepared?

Our group was tasked with developing these protocols and paradigms and referred to them as the Operational Neurotechnology Risk Assessment of Mitigation Paradigm. The ON-RAMP to the neural biotechnological speedway, if you will.

I won't bore you by reading this slide, but I do want you to pay particular attention to the lower box.

Lower box portion of the slide:

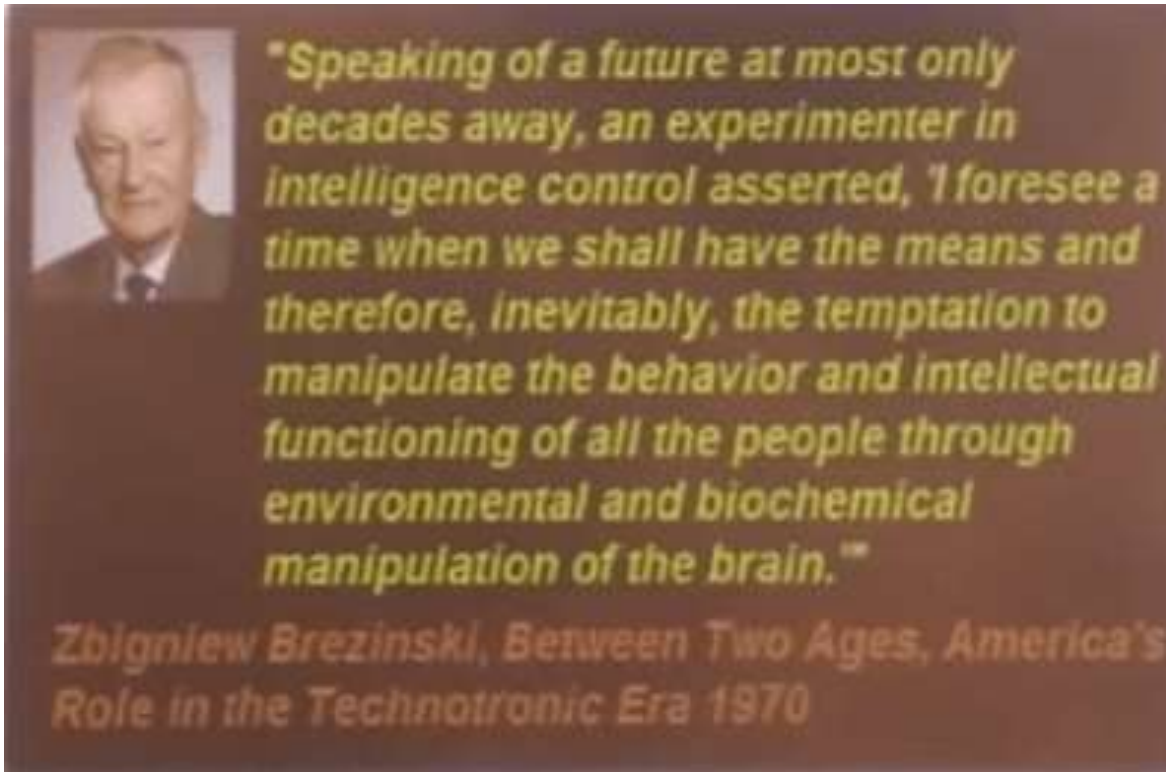


Image credited to Dr. James Giordano/MWI

"Speaking of a future at most only decades away, an experimenter in intelligence control asserted, 'I foresee a time when we shall have the means and therefore, inevitably, the temptation to manipulate the behavior and intellectual functioning of all the people through environmental and biochemical manipulation of the brain.'"

Zbigniew Brezinski, Between Two Ages, America's Role in the Technotronic Era 1970

James Giordano @48:47: "That's, Zig Brezinski. In 1970, he was prescient at forethought, foresight, and said in 1970, in the coming decades we will see an increasing viability and value in being able to affect the neurocognitive space. There was something of the sort of crystal ball in that statement. We are there. And increasingly will be ever deeper in there, based upon not only our own initiatives, but those initiatives of groups around the country.

This is a space that we need to at least be prepared for. A simple precautionary principle will no longer obtain. Why?

Number one, it shouldn't. Number two, it's anachronistic.

Just because we recognize that in some cases the risks may be high and there may be certain benefits, a simple precautionary principle says if the risks or threats outweigh the benefits, don't go. However, we need to also be equally preparative and take a more

advanced precautionary principle that says, you must examine the potential, the probability, and the possibilities of what those risks and threats are, relative to the benefits of a stance of preparedness, and preparedness very often includes engaging the research to understand how these things work and how they can be used.

How do we do it? Well, these are some of the contingencies that I offer, simply as proposition for you. I ask you to consider them.

[@50:05]: Number one, what is the technical rightness of any and all form of neuroscience and technology in these types of agenda? What are key situational variables that may be germane to its use or non-use? Is there a valuation or some revision of the various ethical concepts that may be able to guide these uses in practice, and might we need to develop in some cases, new frameworks, new foundations of ethics that are more applicable, given the fact that the science and technology may be running at a speed to which our ethics and policies may not yet be at pace?

I'm not going to bore you with these contingencies, but what I want you to do is pretty much go down to the very very last one. The idea here is, *can* we utilize neuroscience and technology? And if the answer is yes we can, should we?

And if the answer there is, we already are, and there are some domains and dimensions by which use *should be* advocated – for example, non-lethality, least harm, doing less harm than other forms of interventions and engagements that are currently in use, being able to mitigate individual's capacity or willingness to engage in volatility. In other words, improving the capacibility – the capacity for individuals to gain capability to get along... well perhaps there's some value there.

If these things is going to be used in a more hard weaponized approach, are they being used in those ways that are less harmful than other extant weapons? And/or, what are the postures that we should adopt if in fact another nation utilizes this form of weaponology? What represents what I would consider to be comparative or appropriate proportionality?

And ultimately, if in fact we're going to move into this space, and I think we are moving into this space realistically, not only now but ever more in the future, we have the obligation responsibility to assess whether or not the contingencies for consent to treat our own people are in place.

In other words, if there are things we're going to do to optimize the performance and capabilities of our own personnel, and there are things that are being done on the world stage inclusive, perhaps, by us and our allies, that could mitigate effect or manifest change in other personnel, are we prepared to accept those responsibilities? The responsibilities for ongoing research, responsibilities for ongoing clinical care? Not only of ours, but internationally?

Because of the role that the United States and our allies plays, and because of the need to take an upstanding moral front with regard to the fact that as we develop weapons and as weapons are developed, by us, our allies, and by others, the preparedness stance says we must also be equally assumed, equally in position to be able to not only counter those weapons, but mitigate and treat the effects that those weapons incur.

[@52:42]: And in fact, historically, very often what we've seen is that that has been the interesting march of science technology and medicine, where advancements in medicine very often arise as a consequence of the possible utility of various forms of science and tech to be weaponized and the damage that they incur.

But the question still comes up, ladies and gentlemen, what ethics shall we use to guide research, test development, and perhaps utilization of neuroscience and neurotechnology in these agenda and initiatives?

Clearly here in the United States, as with any open society, our military has relative transparency to the polis for our intents, our goals and our operations. Absolutely certain things are held confidential and classified. You don't show the other team your playbook on Friday and expect to win the game on Sunday. Yes of course. And information we may understand about what they're doing, by virtue of our deep and our intermediate surveillance, may also be need – kept close to the chefs, if you will.

But the transparency of military intent operations goals and interventions here in the United States, has been paramount to the nature and fabric of our infrastructure, our politics, and our government. And the same is true for our allies.

So at least part of this needs to be at least relevant to, afforded by, and guided through civilian ethics. Why? Because in many cases, it is the civilian institutions that to date have been involved at least some of the research and development that can be uptaken into dual or direct use agendas. And as such, these things are subject to, and I think validly subject to, civilian ethics of science and technology, or biomedical ethics.

But if we move increasingly away from that, if we say that indeed the proscriptions and prohibitions, such as those that are being proposed and leveraged by the European Union Human Brain Project, and throughout the world by things like dual use research of concern treaties, such as that which was developed at [S SolarMar], are taken to heart and civilian agencies, institutions and organizations are essentially sort of debanded, disbanded, debarred, from their engagements in these types of activities.

Who then will uptake the torch? Increasingly there's been some interest, consideration, a real discussion as to reinvestment in government agencies and government-sponsored agencies that are specifically and explicitly dedicated to these pursuits. So to avoid any confusion what the intent is, and to also avoid any confusion as to who's doing what. We don't want to get another scenario, such as we do with Robert Oppenheimer looking at the first test of the atomic bomb and going, 'what have I done? I am deaf.' Dr. Oppenheimer, what did you think you were doing?

We don't want to have those confusions. We want to make sure that in fact those who engage the brain sciences for biomedical purposes of wellness, lifestyle, enhancing the human condition, are not necessarily confused with those who may then uptake these things into wins agenda.

But if that's the case, and these things are moving more into governmental institutions, organizations and initiatives, are civilian ethics even viable any longer? And if we engage military ethics, what military ethical principles will be engaged? The use, development, research, surveillance, of these particular things for just war?

And if in fact these things are not used in a strictly warfare fashion where war is declared, by the use of these agents, yet they still tend to be bellicose or disruptive, can we then say that we can justify their use? In other words, not just a just war, but they're just use within this frame of conduct, whatever "this" may be? And/or can we revive another older and less known tradition, which is called 'jus contra bellum'? Which is justification for the use to prevent warfare.

Here, the use of the neurocognitive sciences and intelligence, Human Terrain Teams, psychological operations, such as Narrative Networks, may be viable to de-escalate the volatility and vulnerability towards violence and combativeness.

But again we need to consider to what level we will engage us and whether or not the current ethics that we have in place are viable and valuable to do this, and how these things can then be rendered on the international scale. Because if in fact this is going to demand the multinational global discourse, that it will, then clearly the global relevance of any ethical approach needs to be considered. And ethics, very often, is said to have a big mouth but no teeth, but policies and international law has choppers, that can in fact be retributive and can bite.

What do these developments then incur for ongoing iterations of biological toxins and weapons convention, as well as other treaties, policies, and international laws that may help to guide, direct, if not regulate and govern the use of these particular implements?

[@57:15]: So the situation we're faced with, ladies and gentlemen, is as follows: as we begin to untangle the Gordian knot of the brain, to the development of neuroscience and technologies, we've come to the precarious position of opening the proverbial can of worms of if, how, in what ways, to what extent, and when, these techniques and technologies will be used in weaponized intelligence and national security agenda?

I submit to you, ladies and gentlemen, **that can has already been opened**. It'll be our job, and increasingly *your* job, to be able to navigate this new terrain, this **brave new world**, and what it incurs.

This is Atlas. **[shows slide depicting Atlas and the phrase: "With increasing knowledge comes great power... ..With great power comes great responsibility"]**

The idea of Atlas was that Atlas balanced the integrity and well-being of the world upon his shoulders. I disagree. Atlas of the 21st century, as you see here, balances the world upon her head.

What we know about the brain, we're able to do with the brain, of all those organisms that are embodied and have one that exists in their various environments, cultures and ecologies. Because the brain sciences in its technologies confer tremendous capability of **knowledge intervention**.

With tremendous capability comes tremendous power. And with tremendous power comes great responsibility. Look. That phrase is good enough for Spider-man, it certainly was good enough for [undetermined] Nietzsche, certainly good enough for me, and I hand that off to you.

Because ladies and gentlemen, as I started this, **neuroscience puts the brain at our fingertips. Whether that's to help, to heal, or to harm, is simply the effect of the human condition and how we put this to play.**

You will, in your professional careers and your personal lives, see the brain sciences evermore infiltrated and integrated, not only into the battlespace, but to the bedside, to the boardroom and beyond. They will be a part of your realistic lives in the way we engage each other's, regard each other, treat each other, interact... and perhaps, enter into combat.

Understanding the brain sciences and their power will become one of your obligate responsibilities; not only as military offers – officers, but as civilians of the 21st century global space.

I'd like to end a lecture like this usually by giving you a personal story. My dad, former Navy man, was an engineer. And one of the things that dad liked to do was build stuff, like to tinker. I still like to tinker. I like to work with tools.

My dad was a really bright guy. One of the things he did when I was a kid, he'd come home every month and bring me a new tool. Teach me how to use it. So they're fairly shorter, I was a young kid, I became pretty adroit. Or at least, I thought I was adroit with using tools. And with all of the impulsiveness and zeal, of youth getting a new tool with only partial knowledge, I remember one day dad came home and he said to me, "Jim, here's a brand new tool." I took it from him and said, "Thanks dad!" then I went to go running off. My dad put his hand on my shoulder. He said, "*Jim, slow down. Measure twice. Cut once. Sometimes you can't go back.*"

Ladies and gentlemen, these are the brain sciences. They can and they will increasingly be used in national security, intelligence and defense agenda, globally. We need to measure twice, and cut once. And make sure that the cut we make is one that is for good, one that is for right, and is one that does not cut our own throats, or the throats of others. In those ways they're irreparable. I leave you with my father's wisdom.

These are some of our white papers that we've submitted to the strategic multi-layer assessment group of the Joint Staff of the Pentagon. I can make these slides available to you. These are now all open domain and available to your perusal.

If you're interested in some of our ongoing work by my research group, I provide you with some of our own work, and this is the part of the lecture – I'm gonna look right at the camera – there's the unabashed self-promotional plug. If you're really interested in this, I've only had the wonder and opportunity to engage with you for about the past hour or so, if you're interested in going further down the rabbit hole and reading about this in greater detail, granularity, and specificity, I recommend this to you. [**“NEUROTECHNOLOGY IN NATIONAL SECURITY AND DEFENSE”**]

Not because I'm gonna go out and buy the new Maserati when you all buy the book, but because I'm very proud of it. And I'm proud of it not because I wrote it, because I only really contributed a couple of chapters. I'm proud of it because bringing this together was a multi-year effort that grew out of a set of at first somewhat sensitive, but unclassified and some classified conferences that we had that was then subsequently declassified.

And then also brought together international leaders in the field of military science, bioengineering, neuroscience, philosophy, ethics and law, to provide their perspective, their lens, their vision and voice, as to what's going on in this domain at *this* point. With some speculation, vision and proposition as to what may need to go on in the future so as able to opportunistically utilize the capabilities of the brain sciences and meet and be prepared for the challenge that it offers in this space.

At this point I'd like to thank you all for your attention, I hope I haven't bored you. If you wish to get in touch with me, feel free. Just put in your subject line “USMA” so I don't think you're trying to sell me viagra, not that I wouldn't buy it. But this way I know where it's coming from. If you want to ask questions you have some time to do that now, if you don't get to your questions, feel free to email me; I will email you back. It may not be that day or even that week, because I may be busy or traveling, but I will in fact email you back because that's my obligated responsibility to you. Thank you ladies and gentlemen for your time. I appreciate it.”

Speaker @1:02:36: “If you guys have any questions, we have about 5-10 minutes.”

James Giordano: “Yes sir?”

James Giordano: “Oh yeah, well, it's the different number of different books. The new book there is the idea that is psychedelic drugs had some bad research and of course some of that bad research was not only procedurally bad, it was based upon the font of knowledge we had at the time.

Having engaged in psychedelic research, that's – not, per- well, maybe some, well **having engaged in psychedelic research, one of my first projects actually**

was looking at methylenedioxymethamphetamine, “ecstasy”, under United States Navy grant for the possibility of weaponizing ecstasy as a volatile agent. As viable agent particularly against submariners.

So the understanding that the psychedelics could in fact be used in a variety of different ways inclusive of weaponization, is not new. We look back to the older projects, **such as MKUltra, “mind control ultra”, which utilized Lysergic acid diethylamide [LSD] and psilocybin to be able to alter the cognitions, emotions and behaviors of individuals to see if that could be leveraged. Not only against our own people, but against others, some of the whole brainwashing, mind washing, mind changing effect.**

However, one of the things **we’ve come to recognize is that the mechanisms of these psychedelic agents is far more specific than we thought. And in fact, can be incurred at far lower doses than were heretofore attempted at either experimentally or in social practice.**

So **there’s a regenerated interest, revived interest, in reexamining the mechanisms and effect of these psychedelic compounds**, inclusive lysergic acid diethylamide, psilocybin, dimethyltryptamine, as well as some that are sort of like borderline on what might be considered a psychedelic, such as the affiliative drugs like MDMA, at micro doses. Or sort of intermediate micro doses. Not only to treat individuals who’ve had particular neuropsychiatric spectrum disorders, and there’s a growing body of research that would suggest that even one-time administration of a therapeutic dose of LSD or psilocybin, and/or MDMA, may have very profound therapeutic effects against certain forms of PTSD, intractable depression, and beyond the military framework, even certain forms of psychosis.

We also recognize that these things may be useful in treating forms of TBI, treating other forms of psychiatric and neuropsychiatric disorders, and may also be viable as performance enhancers, particularly if given in a very specific regiment at a very controlled asymmetry.

So to think like so many other things, the more we’re learning about the brain, suggests to us not only what we know, but what we didn’t know. Some of the errors in our previous ways of experimentation empiricism, and that allows us to revisit these things under a newer and I think more granular perspective, that I think may benefit – demonstrate certain benefits, as well as giving rise to concern about certain burdens and risks.

So I think that it certainly warrants continued research, and I think that we need to be cautious in how we interpret that research in its translational effect, but I think there’s great benefit to be gained there. Did I answer your question?

Other questions. Yes sir.”

Audience member @1:05:28: “So I had a similar question. So in regards to the neuro enable- enablement of the warfighter intel operator, do you think one day the military will change its stance towards legalizing the use of pharmaceuticals and nootropics, such as modafinil or, or adderall, to – “

James Giordano: “Yes. Yes. In fact, I can tell you some ongoing research that’s being done now by the Air Force Research Laboratory. It’s looking not only at the comparative use of what’s called nootropic agents, as you said modafinil and some of the newer ones. They’ve been around for awhile but they’re sort of new with regard to the light of their potential utility.

Some of those drugs, like as piracetam, pramiracetam, oxiracetam... these have been around for a long time, but now we’re understanding their mechanisms a little bit better and we’re recognizing how we may be able to use them in concert with other agents, inclusive something like caffeine, and/or how we can also utilize these agents at lower doses that are much more safer dose, that can also then be co-potentiated to the use of various devices.

Here, **we’re talking about the transcranial devices, such as transcranial magnetic stimulation, and transporting electrical stimulation**, and if you’re interested in some of this work, I refer you to a colleague of mine who’s at Air Force; he’s a Wright-Patt. And his name is Andy McKinley. Just look up some of Dr. McKinley’s work in this area, it’s stellar. It’s – it’s leading edge. And the Air Force Office of Scientific Research is funding a number of different projects that are looking at exactly this – this mechanism.

Can we engage certain brain substrates, nodes and networks, through the use of new pharmaceuticals or older pharmaceuticals that are re-dosed, or pharmaceutically delivered in different ways, to most maximize key aspects of the processes of those neural functions that are operative in key tasks for the intelligence operator or warfighter? And, in so doing, can we then take a slightly different stance on our postures towards the viability and value of these drugs under controlled circumstances for the warfighter intelligence operator, and I think that’s the general idea. Okay.

Did I answer your question? Cool. Other questions. Going once. Going twice. Thank you all.”

Perhaps you are wondering what the significance of this transcript is all about. Well, we ought to think seriously about a number of things. **First**, it was given at the time just before and leading up to the hoaxed plandemic declared by the World Health Organization. **Second**, is that Dr. Giordano’s connectional ties with Georgetown University infers Jesuit involvement. **Third**, it validates much of what I have said concerning the wireless EMF/EMR energy and its applications using **5G** technologies. I found Dr. James Giordano’s presentation chilling and frightening because it clearly confirms our own government has the where withal to eliminate each and every one of

us. It can decide when and how people will die, individually, randomly, or by segments, from small to extremely large. With the creation of the CIA and known revealed evidence linking the assassination of President JFK to the CIA, we must understand that elements of our society are preoccupied with ways to eliminate anyone that gets in their way.

What was believed to be once a blessing with the mapping of the human genome in 2003 has quickly lost its glitter for the well-being of humanity and becomes an existential threat to all human life. With the discovery of CRISPR-Cas9 in 2012 has led to execution by virus with impunity. With Dr. James Giordano's presentation you now know of the vast potential available in such things as nano-technology to world leaders. History confirms what I state to be the case and no weapon has ever been developed where it has not been used before.

Blessings,

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