

a0570z-a0669z

a0570z

Nov 15, 2012

(synap, dendrite, neuron)

"neurons do not move around and the dendrites connecting them do not length or shorten." I was not suggesting that neurons and dendrites move.

(2022 update: Neurons actually can & do move around, lol)

Only that synapses connect, disconnect, shorten, and lengthen.

The old idea was strong and weak synapses. The new idea is connected or not connected synapses via the shortening and lengthening process.

a0571z

The note was created Sept 2012

(synap, neuron)

Micah Blumberg

Can any chemical change in the brain be considered a computation?

Dean

Any computation in the brain requires chemical changes (since the brain primarily employs chemical synapses - not electrical synapses). I'd be careful about claiming the converse however since it is possible that certain chemical changes may have a negligible effect on the resulting computation.

Micah Blumberg

The neurotransmitters in the chemical synapses balance the neuron's charge, while creating a charge imbalance in the next neuron. so the chemical synapse is also really an electrical synapse :)

Dean

Well, yes, while it's true that both types of synapses are electrical in nature, the two types are classified separately based on their characteristics.

Chemical synapses communicate via movement of ions (atoms containing charges). Since these atoms are physically propagated through the neuron, their movement is much slower than

an electrical current. However, these atoms are also much more complex than a simple electron and so carry much more information, providing for much richer computational capacity.

Electrical synapses on the other hand are much faster, but because they cannot induce gain (the amplitude of the electrical signal is generally smaller on the postsynaptic side of the gap junction due to attenuation), and because electrical synapses do not employ receptors and because the sign of the electrical charge is always the same as the source, the amount of computation possible is far less than that of chemical synapses.

a0572z

Note Created Sep 22, 2012

(synap, neuron)

Micah Blumberg

What's the difference between a thought in your mind, and a coordinated sequence of spatially positioned electrical spikes? What's the difference between the electrical activity in a human brain, and a hundred year electrical storm on Jupiter? Is Jupiter thinking?

If Jupiter is thinking, how would we communicate with it?

a storm actually is a loop, a vortex, with an eye at the center, like a human being the hurricane is a dissipative system, it's a cousin

you are a dissipative system, a vortex, a loop, just like a hurricane :) or a storm on Jupiter :)

Pete

How would you detect "thoughts" in systems like this?

What about detecting "thoughts" in higher order systems such as nation states and corporations?

See also: http://en.wikipedia.org/wiki/Matrioshka_brain

Micah Blumberg

love Hofstadter btw, good reference Mark :)

The singularity would be the moment when a computer chip interfaces with the whole cosmos as one super computer :)

Precisely one can make the argument that storms do actually evolve "to ever-increasing complexity and "distance" from its environment." because you are such a storm, even now you are isomorphic to a vortex, your a dissipative system that evolved, the conscious descendent of a hurricane or tornado.

What if the neuron was fiber optic and the action potential was a beam of light instead of an electron? Could you still have intelligence?

do you think the synapses can be remodeled to be triggered by a proton instead of an electron?

We can think without electrical spikes! Wow! This is awesome!

Can any chemical change in the brain be considered a computation?

the neurotransmitters in the chemical synapses balance the neuron's charge, while creating a charge imbalance in the next neuron. so the chemical synapse is also really an electrical synapse :)

Dean

Well, yes, while it's true that both types of synapses are electrical in nature, the two types are classified separately based on their characteristics.

Chemical synapses communicate via movement of ions (atoms containing charges). Since these atoms are physically propagated through the neuron, their movement is much slower than an electrical current. However, these atoms are also much more complex than a simple electron and so carry much more information, providing for much richer computational capacity.

Electrical synapses on the other hand are much faster, but because they cannot induce gain (the amplitude of the electrical signal is generally smaller on the post-synaptic side of the gap junction due to attenuation), and because electrical synapses do not employ receptors and because the sign of the electrical charge is always the same as the source, the amount of computation possible is far less than that of chemical synapses.

a0553z

Jun 22, 2012

(LTP, synap, neuron)

"B: I think that's one of the most haunting implications of neuropsychology: Our personal tastes, memories and feelings are constantly being formed and reformed by interactions between neural pathways - and it's those pathways, rather than the memories themselves, that are etched in the physical structure of our brains. So memories and feelings aren't "stored," like bits of computer memory - they're acted out anew each time certain neural communication paths interact with certain others. "

Micah: Micah: I think some memories are stored in long term memory in bits on the outside of hexagonal tube like proteins inside the synapse that help regulate the cells, and are activated when the neuron fires. The shorter term conscious stuff on the other hand is much more flexible, so that brain can dynamically change it's internal structure to optimally process whatever seems to be most important in your sensory experience. The greater the important the more of the brain's internal symphony seems to be dedicated it. It may seem fleeting and chaotic because the connections and the wave patterns are ever changing every time you use them. However the movements of a persons body while biking can also seem very chaotic, and yet they are very coordinated. Humans are highly coordinated in their movements and in their brains, and what looks like chaos in the brain isn't as chaotic as it seems if you slow it down to 1/1000th of a second. Each neuron, like a musician in a symphony, is able to play off it's nearby fellow musician, so the coordination of the whole is something accomplished by each cell individually, reacting to the other cells in it's group of connections. It's true that cells that represent one part of your character sometimes inhibit the desires represented by another part of your character represented by other cells, but this is a matter of learning to coordinate one's self, it's analogous

to the dancer who has two left feet in the beginning, stepping on his partner, to who he becomes with many years of practice improving his coordination in the way he wants to improve.

Ben Thomas Micah, I've seen that article before, and I do think you make a valid point that there's a distinction to be made between short-term and long-term storage methods. Long-term memories do seem to be stored more stably than short-term ones are - and the formation of amygdala-influenced "fear memory" seems to form new neural pathways almost instantaneously.

Ben: However, I'm still waiting to see biological confirmation of a particular molecular-scale mechanism for long-term memory storage. Craddock's model does appear to make sense - but as far as I know, engrams of any kind are still theoretical, in part because memories themselves are multimodal phenomena. When a team of researchers are able to reconstruct an entire memory (whatever that means) from patterns in microtubules extracted from an actual brain, then I'll be convinced.

Ben: Still, I think you and I may actually be talking around a similar point: it's not any specific set of molecules or cells that contain a component of one's character, but rather the interactions and influences among those cells. Stored information only acquires meaning within an interpretive framework - and in the case of the brain, that framework is provided by coordinated patterns of communication at various scales within a structural or functional network.

Ben: In short, it isn't the cells that represent your character - it's the way they communicate with one another.

Micah: I agree with what your saying Ben! Well said. While I read that I was thinking about the nineties, a time when as a teenager I broke open an old computer hard drive, to look at the components, to try to understand how it worked, or the hours spent looking at the flashing reflections of old cd-roms that were hanging from a ceiling, trying to picture how micro indentations could represent a song, picture, or even a short film. For every experience that we have, bunches of cells fire together, and if they all have their own memory chips guiding the shape of the reflections that are reproduced by other cells, then the microtubule data for that bunch becomes like the seed of a tree. The tree is that whole memory now converted from data into live memory, going from a representation in a small bunch, to a large simulation involving lots of the brain's short term memory. That tree is a hundred million or so cells re-representing the data stored in microtubules of the bunches of cells that fired in the seed, active only as long as it needs to be, before the bulk of cells are representing large versions of data that is imprinted in very simple compressed forms inside other cells. So I've compared the relationship between the seed and the tree, with ltp and short term memory, as well as with stored digital data, and what's live on your computer monitor. The seed, long term memory, digital data, in the expanded form becomes, the tree, the conscious experience, or the media your viewing. I know I've over explained this, but it's so interesting to think about. Now lets tear it apart! What's wrong with it!

a0555z

(electromagnetism, neuron) artificial farm workers

we can design their minds, dog like, cat like, horse like, or elephant like minds, even rat or roach minds.

Bill Gates will have lots of land to farm once AI workers appear.

Certain structures like the transcendent nature of the transcendent man are timeless.

connecting people across space and time even if they have no record of the others existence

because transcendent nature is beyond variables in one sense it is the trinity of the concept of experience experiencing, self-reflection, and knowing without content, just the concept of knowing.

<https://aip.scitation.org/doi/10.1063/1.5026556>

It seems that the Ancient Egyptians who knew how to work the machine would have played music to it. Possibly drums. The precise shape of the tetrahedron with evenly distributed limestone walls might scatter & refocus the audio & electromagnetism to somewhere in the center of the structure, apparently below the structure as well. Two thoughts, one is that its a huge leap between a precisely built pyramid with evenly distributed limestone that is acoustically reflective (but also requires sound to be played to activate it) verses a naturally occurring structure like a volcano which might be too large or too unstructured to evenly channel light audio & electromagnetism. It's not impossible its just a huge leap. I would want a closer look at those volcano's on mars to understand the distribution of elements and their acoustical/electrical properties. What I am thinking is that the maybe the Ancient Egyptians encountered the aliens or the gods through drugs like dmt or drugs similar

to Ayawasca. I would guess that Ancient Egyptians had their own psychoactive drugs that may have been lost to time, or maybe they used some of the same ones I don't know.

but the really interesting idea I just had is what if that Pyramid created a super mind, what if that Pyramid is an artificial general intelligence or an artificial super intelligence? What if its a conscious sentient robot, that just needs to be filled with either music and or singing voices to activate?

What if it has super intelligence also? What if we just need to fill up that Pyramid with singing acoustic musicians and it would become alive, interfacing with humanity?

"With the help of numerical simulations and multipole decomposition, it is found that spectra of the extinction and scattering cross sections include resonant features associated with excitation of the Pyramid's electromagnetic dipole and quadrupole moments."

The thing is your brain, the human brain has dipole and quadrupole moments

and electromagnetic focusing & scattering, the human brain does, and this pyramid, that's why I speculate about it being an AI

in addition to being a bci

except that the pyramid brain doesn't have its own neurons

so perhaps its like super awareness without the content of consciousness

a0559z

(Neuralink, neuron) Flawed Assumption

One of the points: Neuralink has one fundamentally wrong assumption and that is that the only way they can measure a real time action potential is with an implanted electrode that is 2 microns away, but I believe a real time action potential can be measured from outside the brain with near infrared light imaging and the reversal of the refraction of the light, because the neurons body physically changes size when it fires.

a0560z

Feb 26, 2012

(cortex, neuron)

MyBook5 / MindMapKey / IAmAVortex / HowCatsHunt

Do Cats think?

Intelligence is cellular, awareness is a stream of expectations, or as Jeff Hawkins says "thinking is prediction" prediction is a narrative that coordinates movement, so if it has a brain and it moves then it makes predictions about what is there and that is thinking.

Cats are natural hunters, and that means they sit and listen, a lot, that's meditation (sitting & listening) so the average cat is far more likely than the average human to accidentally become an enlightened being.

F.B.

"Micah, what about the case where something else does the thinking/moving for a human, something I would not call a narrative or the act of predicting? It's more on the involuntary side and it comes from an unknown place. Not to say the other type of intelligence has no use"

Micah Blumberg

"F.B.? Can you give an example? Are you talking about instinctual reactions from the autonomic nervous system like pulling your hand away from a hot stove involuntarily before thinking about it just because it's hot? Technically intelligence in the autonomic nervous system works the same

way, its just optimized differently because its a smaller system that works without direct input from the brain, but it's technically the same kind of intelligence at work."

F.B.

"One example is when you stumble across something you are looking for when you don't really know where you are going.

Another example is when a solution to something you've been trying to get the answer to suddenly pops up in your consciousness (under similar conditions)

Another example is when I play an online shooter game. When someone is not in a certain state and I am my crosshair will find their head quickly (headshot is automatic win). And vice versa."

Micah Blumberg

"F.B. I think your entire mind is automatic. It's always sorting incoming sensory data into categories to discern paths to what the body wants. So stumbling across something you are looking for even without knowing where you are going is the sorting process. Your senses bring in data about the surroundings that creates a distinct impact in the neural categories (neurons) that your mind uses for sorting and making distinct predictions (neurons anticipating) about what is going to happen next and what is there now (neurons actually firing) resulting in a solution (prediction response) popping into you head that represents a sequence of neural patterns that have actually fired in your head, and the effect of a solution "that came out of no where" sensation happens because those same neurons that fired inhibit nearby neurons from also firing, resulting in answers that are surrounded by blank spots, women often think this is intuition and call it psychic power. The certain state of being ready to fire in the video game mirrors the certain state of neurons in anticipatory mode ready to fire in the brain. Literally if you do a warm up mentally or just by playing the game a little while, and then do a moment of deliberate relaxation so the fired neurons can reset, (like mediation Jedi master) you'll get your neurons into an anticipatory state, and be the better shooter for a time."

F.B.

The thing I found interesting in the game example is that players will respond to each others states even when they can't see each others physical bodies or hear each others voices.

Also, ridiculous headshots have happened. Like my opponent will be behind a wall (all I know is that they are behind a wall, not where, and I can't hear them) and a headshot will happen. Or they will be quickly moving in the air(much faster than ground) and a headshot will happen. Also, I am not special in doing this. It doesn't happen often but many people who play have done it.

I can see how we were talking about more similar things from the start than I had originally thought.

41 minutes ago · Unlike · 1

Micah Blumberg

When a cat is on the hunt it is listening, meaning that the neurons closest to the sense organs are the most active. That's like when you are looking for the opponent in your crosshairs, knowing your opponent is right behind that wall, maybe not knowing exactly where, but being literally physically more ready to shoot. When you and the cat spot some novel sensory activity, that starts a chain reaction of neural firings traveling up the linked neurons in the neocortex into more categories (neurons) which represent more sorting. So if the mind sorted that you (or the cat) are "not looking at an interesting target" then that information is sent back down to the bottom to keep searching. If you (or the cat) notice an actual target that is interesting, like the rival player you are about to take down (or a bug), then the neurons light up like a Christmas tree all the way to the very high fifth layer of the neo cortex where most motor controls are. (Grey matter) Neurons there send signals down through (White matter) myelinated axons (your highbandwidth fiber optics in a way) which activates proteins triggering muscle movement in a highly coordinated sequence, where you experience taking the shot (or the cat experiences launching its whole body at the target). Each time you do a headshot a bit of myelin (like wax or plaque) is added to that neuropathway, so that each successive time you do it in the future you get faster and better at headshots. After ten thousand hours of playing (or doing anything) so much myelin builds up over those repeatedly used neuron/axon paths that your brain processes the hunting and shooting 100 times faster than a newbie to the game.

a0561z

(neuron) <http://www.mindupdate.com/2011/12/neuroplasticity-protocol/>
<http://www.mindupdate.com/2011/12/neuroplasticity-protocol/>

Neuroplasticity Protocol

(not my writing) "Inspired by the work of Dr. Len Ochs and Dr. Ruth Olmstead, I (Transparent Corp) came up with this protocol for increasing plasticity in the brain. It is a three part protocol, increasing brainwave frequency for one session, and decreasing for another, similar to the research by Dr. Olmstead for treatment of ADHD/ADD

http://www.avstim.com/manuals/olmstead_dissertation.pdf. I further enhanced the sessions by starting at delta and using Dr. Len Och's technique of stimulating ½ HZ above or below the most dominant brainwave for each of the brainwave groups. These sessions are to be done once a week, not on consecutive days. The third session is a maintenance session based on Dr. Och's protocol of alternatively stimulating a fraction of a HZ above or below your dominant frequency in 2 minute intervals between a 3- 30 HZ range. A video of him describing this technique and its overwhelming success can be seen at MindPlace's YouTube site.

<http://www.youtube.com/themindplace#p/u/17/RMcoB98xKts> . This session can be done on the days you aren't doing the Inhibit/ Excite sessions.

The idea is to push and pull at your brainwave patterns, breaking stuck patterns, and to increase neuronal activation resulting in dendritic growth. I believe it will be beneficial for a wide range of conditions as well as general mental health and wellbeing.

You will need the Emotiv Epoc and Mind Workstation Professional or Enterprise for these sessions as they are advanced EEG driven sessions. I have created similar sessions that can

be used with Neuro Programmer and Mind Workstation Regular. For those users, the effectiveness of these sessions will be greatly enhanced if the Biooptimization feature is used.

These sessions can be downloaded for free at Transparent Corp's Community forum"
<http://www.transparentcorp.com/community/forum/> or by contacting Transparent Support.

a0562z

Sep 25, 2013

(synap, cereb, cortex, neuron)

Black Square says: Albert Kong Please read the relevant literature before trying to contradict an expert. At the very least, phrase your opinions as questions rather than attempting to tell people about their own academic field. Sorry to be snooty, but I have better things to with my time than educate those who insist that they know things without doing their homework.

You could start with a university course on Electrodynamics. I highly recommend MIT's 18.02 course; it is excellent. For EEG specifically, 'Electric Fields of the Brain: The Neurophysics of EEG' by Nunez and Srinivasan is a reference text for this subject matter.

Now, for your points,

1) The EEG signal is generated, not by action potentials, but by individual synapses, principally, on pyramidal cells in the cerebral cortex. This movement of charges across the synaptic membrane alters the local field potential (LFP) of that region of the cortex. Differences in electric potential allow currents to flow, which 'pulls' or 'pushes' electrons in or out of the scalp electrodes depending on the value of the electric potential of the electrode relative to the LFP it's measuring.

2) You can't detect every neuron in the brain from outside the skull because you can only detect what are called 'open fields' outside the skull. That is, the electric field generated by the neurons isn't cancelled out by the neurons in its neighbourhood. You need a large number of neurons (i.e. 10,000 per 1 cm²) in order to have a detectable open field at the scalp.

3) To have a higher resolution, you need more electrodes, not better filters. The accuracy of EEG is limited by the ratio of CSF and skull conductivity. The interface between these two regions of conductivity 'smudges' the signal, impairing its localisation accuracy. MEG, by contrast, is not subject to this 'smudging' and therefore has better localisation accuracy.

4) Digital EEG systems are indeed just fancy voltmeters. The sensing components are a Ag/AgCl electrode, an instrumentation amplifier, an op-amp, and an analogue-to-digital converter. Magnetic induction is not a principal mechanism of any of those devices.

5 minutes ago · Unlike · 1

a0563z

Dec 10, 2012

(perception, conjecture, emotion, neuron, category, theory)

Rostyslav Dymere

'Reality' refers only to the world of things, not of thought, and not of words.

Like · · Unfollow Post · Saturday at 11:50pm via mobile

Micah Blumberg

says you, because that is your convention, but many people think reality is an all inclusive term, why should your thoughts which some people believe actually are physical things be outside reality? we know words are real because words impact a person, words trigger chain reactions in neurons, and stimulate brainwave patterns, so words must be real. How could something non-real change a persons neurophysiology? Different regions of your mind will light up in Brainscans corresponding to the kinds of words you are using and the types of thoughts you are engaged in. If you think words and thoughts are not real try EEG. A live brain scan with EEG or another technology will end the dualism idea that words and thoughts are not part of reality.

Yesterday at 7:35am · Edited · Like

Rostyslav Dymere

Yes, the term "reality" is now accepted by many as all inclusive term. And it is this very practice of using the term which I doubt to be fruitful for a strict thinking.

Yesterday at 7:31am via mobile · Like

Micah Blumberg

Okay, what is the term you want to use instead? How do you define strict thinking?

Yesterday at 7:37am · Edited · Like

Rostyslav Dymere

I do not believe that words as such can have a real impact. If I, for instance, do not speak some language the words of that language will not have any immediate real impact on me, they just will not exist for me. What have an impact are those meanings which I can add to something which I accept in my thought as something real.

Yesterday at 7:37am via mobile · Like

Micah Blumberg

Okay well have you read about neuroplasticity, studied neurophysics, taken classes in neuropsychology??? Have you tried EEG or experienced other such brainscans. Have you read the book "The brain that changes itself" In my research I have. Have you ever read any story that triggered "a chain reaction, the chemical precursors that trigger the onset of an emotion" if you have never felt emotion from something someone said then perhaps you can actually believe that words do not impact you. Wait hold on a second, you say meaning in words can impact your neurophysiology but not words themselves? You say words in a language you don't

understand will not impact you aha. Well that would mean you think noise does not impact you right? Have you ever listened to binarual beats, or isochronic beats? Used a mind machine, an Audio Visual System for brainwave entrainment? Does music effect you even if the words are in a foreign language? Because what I mean is that words have an actual impact in your biological tissue regardless of whether you know you have been impacted. Just like a loud jarring sound or a soft harmonic voice will have different impacts on your neurology. Words effect braincells.

Yesterday at 7:52am · Edited · Like

Rostyslav Dymere

I think that, for now at least, there is no all inclusive term that could not be questioned. And this is a problem for philosophy. Concerning strict thinking, I believe that it is not possible before vague terms will be removed from language of thinking.

Yesterday at 7:47am via mobile · Like

Rostyslav Dymere

Yes, I say meanings, not words.

Yesterday at 7:50am via mobile · Like

Micah Blumberg

Do you think images that you see might effect you even if you are not conscious of seeing the image? What if you don't understand something you see, can it still effect you?

Yesterday at 7:57am · Edited · Like

Micah Blumberg

Do you think sounds that you hear might effect you even if you are not conscious of hearing the sounds? What if you don't understand something you hear, can it still effect you?

Yesterday at 8:00am · Edited · Like

Rostyslav Dymere

Words and sounds are not the same. I said of words, not of sounds. Words can be not only spoken aloud but also written and so on. Sound can have an impact on me, as well as an apple that falls down onto my head. But word without meaning cannot.

Yesterday at 8:06am via mobile · Like

Micah Blumberg

What is strict thinking? Do you mean in Aristotle's idea that everything is either true or it is false? Is strict thinking like seeing the world in black and white? Does strict thinking exclude the existence of that which is neither true nor not true, and does it exclude that which is both true and not true?

Yesterday at 8:07am · Edited · Like

Rostyslav Dymere

I can hear sounds or see colors but words I must understand, not just hear or see, in order they could impact me.

Yesterday at 8:11am via mobile · Like

Micah Blumberg

Did I miss the memo on some new imperial imperative by the thought police knights of the old republic of chin-a-merican and the federation of monkeys of the junglebook who all agree so it must be so, and the universal church of established science by fiat rather than experimentation, that we are all supposed to be thinking a certain way now? Are the thought police coming to iron all our thoughts into rational reductionist logic, and linear syntax, shall I always think with perfect punctuation grammar and spelling in my head? Is that strict thinking?

Yesterday at 8:14am · Edited · Like

Rostyslav Dymere

True and false are terms of logic, not of being. For Aristotle, logos is in the basis of being as well as of logic. And this is disputable for me. In order to divorce thought and reality, one must remove logos from the basis of being.

Yesterday at 8:18am via mobile · Like

Micah Blumberg

Now what do you mean by divorce? Do you picture thought and reality as like two parallel non-intersecting planes in a linear algebra matrix?

Yesterday at 8:24am · Edited · Like

Rostyslav Dymere

Well, I wouldn't make an idol from the method of experimentation as well, as I wouldn't make an idol from Sir Francis Bacon who was its renown father. To put one idol instead of another is not yet a sign of free thinking.

Yesterday at 8:25am via mobile · Like

Micah Blumberg

First you say strict thinking, now you say free thinking, what happened to strict thinking? Why even let the thought police into your head? Just tell them "stay out of my head thought police I don't consent to your laws, or your judgments!" then you can be free of the laws of free thinking. Then no one can scold you for not doing proper free thinking!

Yesterday at 8:33am · Edited · Like

Rostyslav Dymere

Well, when one moves from Aristotle to Plato she or he suddenly finds out that there is no strict thinking without a police (the very word comes from a famous Plato's masterpiece).

Yesterday at 8:33am via mobile · Unlike · 1

Rostyslav Dymere

And she or he comes back to Aristotle, she or he could be probably very surprised by relising that the role played in Plato's Republic by the police is played in Aristotle's philosophy by the laws of logic. And what he says is that one cannot just say to the laws: "Stand out of my mind".
Yesterday at 8:40am via mobile · Like

Micah Blumberg

Okay so reality is on one brane in the grid, and thought is on another brane in the grid, what is the mechanism that unites these two branes? Or do they ever connect?
Yesterday at 8:41am · Like

Rostyslav Dymere

If you have laws of thinking you cannot have a free thinking in a libertarian sense of the word.
Yesterday at 8:44am via mobile · Like

Micah Blumberg

The law is by implicit consent, whether you are aware of it or not, you agree to your existence and to the law, unless you don't, unless you explicitly do not consent to it, unless you cease to think you are your name, which is your legal fiction.
Yesterday at 8:46am · Like

Micah Blumberg Have you read the book by harry browne: "how i found freedom in an unfree world"

Yesterday at 8:53am · Edited · Like

Rostyslav Dymere Who is the author?

Yesterday at 8:50am via mobile · Like

Micah Blumberg Okay so do reality and thoughts ever intersect? are you at the intersection of reality and thoughts? what is the dynamic? since thoughts are not in reality where are they?
Yesterday at 9:04am · Like

Rostyslav Dymere As far as I know Browne's point is how to become free from political institutions not from the frames of logic. He talks about freedom of an individual without disputing Aristotle's identity law which is in the basis of the concept of individual.

Yesterday at 9:05am via mobile · Like

Rostyslav Dymere Aristotle was a very cunning man! Everybody fights against Plato's police while almost nobody dare to fight against Aristotle's laws of logic.

Yesterday at 9:11am via mobile · Like

Micah Blumberg I was watching ted talks, and a quantum physicist says that the strangeness of quantum physics is that everything is literally defined by everything else.

http://www.ted.com/talks/aaron_o_connell_making_sense_of_a_visible_quantum_object.html

Yesterday at 9:17am · Edited · Like

Rostyslav Dymere

I think, reality and thought do not intersect. There is a borderline between them, and we are on this borderline or maybe within it.

Yesterday at 9:14am via mobile · Like

Rostyslav Dymere

Well, quantum physics seems to be free from Aristotle's laws. But it is not free from Frege's meanings! So, some another logic rule over it! And that's the problem: quantum physics is also not about reality: things actually disappear in it, they are just concepts there.

Yesterday at 9:21am via mobile · Like

Micah Blumberg

Aristotle's law of identity is "a thing is itself" but he does not say "a thing is a thing" in Haskell when you write an identity you don't say $A : A$, because that's redundant.

Micah Blumberg

$A = A$ is a bastardization of the law of identity, it takes something with the profundity of the first law of thermodynamics and it reduces it to ham fisted redundancy. You've taken the identity out of identity.

Rostyslav Dymere

And since the meanings are created by humans, with their judgements and conclusions, they are still ironically subjected to Aristotle's laws, though in an even more complicated way.

Micah Blumberg

a man is himself, is identity. a man is a man, is redundancy without identity

Rostyslav Dymere

You've taken the identity out of identity.

Exactly! This was ridiculed already in a famous story on Baron Munchausen who pulled himself out from the bog.

Micah Blumberg

Aristotle's three laws break down in three places, in Buddhist reasoning, in mathematics, and in quantum physics.

Micah Blumberg

Buddha's concept of identity has no conflict with modern math and modern physics, unlike Aristotle.

Rostyslav Dymere

How do you understand: "thing is itself"? This formula would be meaningless for Aristotle.

Micah Blumberg

You are what you are from a point of view, but not from all points of view. From space you might be less than a dot.

Rostyslav Dymere

This formula was derived rather from Kant with his famous "ding an sich".

Micah Blumberg

"Now 'why a thing is itself' is a meaningless inquiry (for—to give meaning to the question 'why'—the fact or the existence of the thing must already be evident—e.g., that the moon is eclipsed—but the fact that a thing is itself is the single reason and the single cause to be given in answer to all such questions as why the man is man, or the musician musical, unless one were to answer, 'because each thing is inseparable from itself, and its being one just meant this.' This, however, is common to all things and is a short and easy way with the question.)"

Rostyslav Dymere

I wouldn't agree about Buddha's role in contemporary physics and mathematics, and, I believe, he also wouldn't.

Rostyslav Dymere

What is really great Indian contribution to the math is their number 'zero'. But it was accepted by mathematicians long time ago.

Micah Blumberg

I'm not suggesting Buddha has a role in math and physics, only that his reasoning seems cleaner, more compatible, and perhaps even better than Aristotle's three laws. Aristotle's laws seem to have regional application instead of universal application. They are not federal laws, their state laws.

Rostyslav Dymere

In your quotation you touched the concept of evidence, and this is a very difficult question. Because it is connected with concepts of perception, proofs, deduction and so on. All this must be explained, not just be taken for granted.

Micah Blumberg

It's like the laws of thermodynamics applied to dieting, you've seen the equation yes? change in delta energy is energy in minus energy out? but that doesn't say anything about causality. consuming one thousand calories of sugar vs consuming one thousand calories of fat will have a different effect, because the body is partitioned to store energy when insulin is triggered, and fat won't trigger insulin, sugar will. So thermodynamics isn't complex enough to explain biology at large scales. Simple laws like Aristotle's three laws, or Godel's incompleteness theorem just do not apply to all contexts, in reality and or in thought.

23 hours ago · Edited · Like

Rostyslav Dymerecs

Could you explain, please, what is universal in Buddha's reasoning?

Micah Blumberg

http://www.science20.com/greatest_science_mysteries/buddha_topoi_and_quantum_gravity-93336

Rostyslav Dymerecs

I would like to reply on some of your previous remarks. To consider something from different points of view was presented already by Zenon of Elea as a paradox, or aporia. It puts a limit to applicability of Aristotelian logic, that is why it is actually ignored by it.

Rostyslav Dymerecs

Well, but there is no reality in quantum theory, because there are no perceptible things. If you are ready to sacrifice reality then you can accept quantum physics and maybe even Buddha. But without reality, without things there is no Universe. And nothing universal can be without a Universe.

Micah Blumberg

So the new idea is to apply topoi, or category theory to Artificial Intelligence, meaning to thinking, to thought, thus began the facebok group called Categories & Geometry of the mind. Somehow your mind has partitioned reality and thinking into two different disconnected non-intersecting spaces, without any explanation, and I almost feel like your drawing a conclusion that is equivalent to me asking what created G-d? and you answering back that G-d created G-d. What is frustrating is that you can express a conjecture with zero reasoning behind it. Like it is some axiom that thought and reality are on two different planes, you don't have to explain why, you don't have to prove it, you don't have to argue it with reason, you just declare it by fiat, and its frustrating <https://www.facebok.com/groups/categories.and.geometry.of.mind/>

Micah Blumberg

"Well, but there is no reality in quantum theory, because there are no perceptible things. If you are ready to sacrifice reality then you can accept quantum physics and maybe even Buddha. But without reality, without things there is no Universe. And nothing universal can be without a Universe."

Quantum physics is perceivable because it is predictable, we perceive it by accurately predicting the odds of the next state. If you watch that Ted Talks video I linked earlier in this thread you will hear and see that quantum physics actually applies at all scales of reality, your looking at quantum physics right now. You won't sacrifice reality by accepting this, you will be sacrificing illusion, or the illusion of an imagined reality that was never real, except on average. Reality is real on average, the rest of the time it's not even here.

Micah Blumberg

However please respond to anything I wrote earlier. Please explain why reality and thought have to be disconnected, non-intersecting, I mean I guess if you believe Aristotle's three laws define reality itself you might have to think that reality and thought are disconnected, but why would you do that?

Rostyslav Dymerecs

I don't think that quantum physics is actually applied to reality. In my opinion, the argument that quantum physics is perceivable because it is predictable is based on the wrong assumption that reality must be predictable. Reality is not predictable. After all, what is predictability?

Rostyslav Dymerecs

A concept of predictability is based on the assumption that every number of items can be put in a more or strict sequence which could be depicted as a line or trajectory. That means that in a sense all reality can be reduced to a line. However, the question then is: what is behind this line? Emptiness? Could you imagine that all the reality is just a thin line? OK, maybe. But then it has to have a very complicated geometrical structure. And what is then reality, the line or the structure, or maybe something else?

Rostyslav Dymerecs

Anyway, if we accept that reality is the line, then the structure is something else, because the structure is not the line. What is then the structure? And what is the connection between the line and the structure? Actually, there are much more questions.

Quantum physics can predict in which place of the structure and in which time we can meet the line. But this is a kind of agreement like that made between two humans concerning their meeting at a special place and at a special time. But this is not the reality, because there could be made some another agreement as well.

Micah Blumberg

"Reality is not predictable. After all, what is predictability?" If reality was not somewhat predictable your brain wouldn't work, because your brain is in large part a memory-becomes-prediction machine.

Micah Blumberg

In another dimension of awareness, the sun does not appear to be a ball of fire in the sky, it appears to be a line. A streak across the sky. The sphere in the fourth dimension is a line.

Micah Blumberg

Seeing reality as a line is just another perspective, it does not mean you have to then find structure elsewhere. Its still there, in the line.

Rostyslav Dymerecs

It doesn't prove anything. All this can be just imagined by us. One can depict some fantastic images and put them into a computer's memory, and every time after activating the memory

they will predictably appear on the screen of the computer, but all this still doesn't mean that the pictures reflect reality.

Micah Blumberg

All a man has is his best bet, and his best bet is all he needs to move. There are a lot of possibilities, and what the brain does is synthesize a best bet about what is real in order to coordinate movement, movement that is essentially pathfinding, connecting cells to sources of nutrients in the world. Life is a hungry dissipative system, life is a vortex, consuming, and exporting entropy to maintain and increase its equilibrium. Life is like a hurricane, or galaxy, in some respects, order increases in one area to further increase entropy elsewhere. This dissipative process preserves alignment with the second law of thermodynamics. A man doesn't need to prove anything in his life, all he has is already all he needs to move. His best bet, belief, and memory-prediction chain reaction to coordinate dynamic movement.

Rostyslav Dymerecs

Is it your point that brain is a kind of computer?

Micah Blumberg

No, the point is that it's a vortex, whatever it consumes effects its equilibrium. Whether it consumes words it doesn't understand, or words that contain more meaning.

Micah Blumberg

I don't think reality and thought are two different disconnected realms hovering near each other. I wasn't persuaded by your argument which adds needless complexity. Thought is physical, it's just very small you do not usually see it. The quantum realm is also physical and real. Sorry I was not persuaded by your arguments about the quantum realm not being part of reality either. You lack rationalized justification for such needless additional complexity.

Rostyslav Dymerecs

Well, nevertheless for me it was useful discussion. Thanks.

Micah Blumberg

Likewise :)

a0564z

Jun 27, 2013

(perception, neuron)

"The real breakthrough in brain evolution was the feedback loop in perception-action cycles. That allowed animals to be aware of the outcome of their actions." that was one breakthrough, even insects have feedback loops. I think a bigger breakthrough is the human astrocyte and neuron-astrocyte metabolism which may have key responsibility in the expansion of the human memory capacity, long term vision, and planning.

a0569z

Jul 14, 2012

(synap, layers, neuron)

Yes I've experienced death in dreams too. I've experienced stuff weirder than death actually. I once awoke in a new reality, thinking I was about 15 years old, assuming I was a special needs person, like someone with down syndrome or brain damage, and I was hanging out with these young men who had volunteered to take me on a trip. Then I realized I could not remember my name, their names, where I was, where I lived, my mind had amnesia. What's worse is these guys were not nice guys who were taking special kids out for a nice day. These guys were guys from work, and I had been playing football with them only 45 minutes before. They barely knew me, and they were freaked out by what I was saying about not having any memories. So they gave me my keys, pointed me to my car, and pointed me to the freeway. So I got on the 605, used my phone to call "Dad" who I figured could probably tell me who I was, and how I could drive home. Over the next hour, my memories gradually came back, in pieces. I drove my car home safely. Later those guys became my friends, but they honestly thought I was fucking with them. They didn't believe in mental illness, or amnesia, or brain injury, it was a myth to them, I was just strange and frightening to them on that day.

4 minutes ago · Like

Micah Blumberg Another time I traveled through a parallel dimension of spacetime, into another universe. To visit some amazing new people, who I had connected with because psychoactive mushrooms had become the gateway between realities, and as I walked Berkeley and San Francisco with these men who were both born women, I was in three layers of reality at once, and reality was breathing, and I saw people who had seemed like individual before, but I realize that they were like 200,000 people all at once, each person was like another parallel reality of the same person. They all said "I am" as if they were all unique, but all of these unique individuals were all the same, sharing a quality of their personality, that I realized the personality was transcendent, the personality was driving them and not the other way around.

I remember as a child, trying to hold onto the grass, as the world turned upside down, the earth lost gravity, the grass felt apart in my grip, and I fell into the sky. As a child I fell out of the top of a bunk bed, and got a concussion. When my head hit the ground, there was sharp pain. Sudden Darkness. Then like those old tube televisions, turning off, I felt by brain shut off. Watch this clip, but it wasn't like seeing this, it was like feeling this.

<http://www.youtube.com/watch?v=WX3ivTj8oTQ&feature=related>

TV Static Turn Off Effect

www.youtube.com

TV static/turn off effect made in Sony Vegas Pro 9. Free download link for your project:

<http://www.divshare.com/download/16017893-8bc>

3 minutes ago · Edited · Like · 1 ·

Micah Blumberg I remember dreams in amazing detail, I have for years, they just get more detailed the older I get.

Actually you could also call that a brain shutoff and reboot, because I didn't actually die, and I had another experience of my brain rebooting, where I was somehow aware of parts of it gradually waking up and becoming more active, assessing the situation, the internal damage, lots of speculation about something having gone wrong in my head.

Once I had what felt like a fever, and I became aware of my awareness as both an electric river and an electric song, flowing through my brain cells.

It's not that it was death, but it was for me the experience of what death is like, when a brain is dead, there is no electrical activity, similarly when a tv is shut off, there is no electrical activity. The analogy is strong, and the experience made sense too.

My experience of sensing my awareness as an electric song and or sensing my conscious mind as a stream of consciousness is not an isolated experience. There is a book on EEG that is called "Symphony of the Mind" your brainwaves are coordinated neuron patterns like as if each neuron was the instrument and member of a grand orchestra musical. I didn't conceptualize it at the time, but it was one of those odd things. Have you ever stood on the Seal Beach pier in California from 5am two hours before dawn, to see the most amazing pastel colored sky, light blues and pinks, and then suddenly this gold sunlight that was so vibrant it was like fire in the sky. Like nothing else on earth looks exactly like the Sun, it's unique. The same thing was true when I experienced what I describe as "awareness" or a conscious stream of electrical activity, that was both mundane and magical like the Sun at the same time. To experience it is to experience something unique, something that could not be anything else. Maybe "awareness" isn't the perfect word for it, but whatever it was, it was singing my thoughts.

It was as I was part of the awareness looking at another part of the awareness. Just as easily as how you are part of a human, and when you look at your arm moving you are noticing a part of yourself moving. It was nothing more complicated than that.

Today, using a computer to attach light and sound to brainwaves, I train people to recognize their own brainwave patterns. First you watch, learn the patterns over time. Then gradually you notice that as your internal state changes the light and sound on the computer changes. It changes with your thoughts, feelings, and internal representations. You make the connections between feeling, which is also now a brainwave, which is now a sound, and also light. You start to play with it, and soon you can really make the light bright, you can make the sound louder, increase the pitch, increase the speed, the reverb, all with your thoughts and feelings. Overtime you connect the dots and realize that this EEG is scanning brainwaves, your thoughts and feelings are these coordinated waves, they are coordinating your bodies movement, second by second, you begin to sense them, and control them, the same way you control your arms and

legs. Even without the light and sound you can still sense your brainwaves, and coordinate brain in a more conscious way. For example, if you get punched in the nose by a rude punk, and your car gets hit, and you are in a fury, but you have an interview in 5 minutes, and you have to be calm to give a great first impression so you get the job. Well that is really hard to do, unless your aware of how you are coordinating your brainwaves. Your feelings and your inner states of happiness are something you control, depending on how aware you are. I think that means how connected you are. With my machine, because we fire isochronic light and sound beats at you, while your doing this, we make your neurons fire harder, neurons that fire together wire together, and form rapid bonds, that increases the speed at which you learn your brainwaves, and expands your self awareness even faster compared with other EEG. So you manipulate your happiness and inner state just like your opening and closing your hand. So you imagine the upset as a marker in your hand, then you open your hand, imagine dropping the marker, and drop the negative feelings with the marker. This is how easy and how fast it can be, when your brain is able to make this coordination happen, because of all your new neural bonds between regions of the mind. Your brainwaves are moving all the time, but it's just like your hand moving, it's not weird it's different. So you quickly drop the pattern of negative feeling. **YOU ACE YOUR INTERVIEW!**

fixed some sentences above
11 minutes ago · Like

Micah Blumberg I've been writing run on sentences since I was in grade school. It's not that I can't use correct grammar, I can. Somehow, when I am writing, my brain feels such enthusiasm, while putting words and letters together, I am in my mind having a very sensory experience while writing. I'm thinking about the sequence of concepts, and not at all about the structure of sentences. With each word there are visualizations of what other people might interpret from it. It feels like music to me when I am writing. I want it to be in a stream almost, not separate by periods, and commas. It's a song of concepts. Then later I realize I really need the punctuation, and grammar, because otherwise the sentences do not read the same to me as when I first wrote them down from my mind. So in doing Neo Mind Cycle I have these moments right now, where I become very aware of my cognitive process, while doing something, like writing. I begin to notice reasons why I might want to change the way I write. To develop grammatically correct sentences first, before enthusiasm hits the enter key. As I rethink it, a reorganization is happening, in my physiology. Rethink your life, you will create real change every time you do.

In the brain everything is triggering or inhibiting everything else, highly coordinate sequences of brainwave activity are both triggered by sensory data, and are triggering higher levels and lower levels of sensory data to make representations at the same time these brainwaves are both triggering and being triggered by muscular data controlling and receiving the bodies movement every second. When something needs attention, like an emergency, it travels a special route to your conscious self, more rapidly involving more areas of the brain all at once, in less coordinated brains this can result in people becoming frozen during an emergency because everything is activated, and that includes all their inhibitions. That's why contingency training

and emergency training is so valuable, when everything is activated all at once, your brain needs to have an already learned path, otherwise it's going to be slow going. When you realize how your feelings as brainwaves are reflected in a light pattern and or a sound pattern, you begin to build a bigger concept around your feelings, brainwaves, and how what your doing is effecting the light and sound. As long as your mind senses a reward in this activity, it continues, and with the stimulation we provide via isochronic beats in all frequencies it feels good. So your mind learns its brainwaves by making more connections among synapses (neurons that fire together wire together) that eventually begin to represent what is happening, it's a concept created by connections between synapses. Gradually your mind is making a map of what's happening, a map of the causes within the mind, so when presented with the opportunity to do something more coordinate, that might result in a long term or short term reward, your more likely to do it, because that pathway has been built, that pathway of your choice to do what you want to get the reward is the physical concept created by connections between the synapses from neurons that fired together in sequence during your experiences. These learned patterns in synapses, then begin to be applied to other areas of your brain and your life, because all the cells are modular, any part of the brain can work with any other part of the brain, but the key to that happening is the patterns formed through learning. Cross synaptic learning, which is the core of what Neo Mind Cycle is. It makes you more flexible mentally.

Tags:

book, Brains, brainwaves, choice, killed, Neuro, neurofeedback, website

a0570z

Nov 15, 2012

(synap, dendrite, neuron)

"neurons do not move around and the dendrites connecting them do not length or shorten." I was not suggesting that neurons and dendrites move.

(2022 update: Neurons actually can & do move around, lol)

Only that synapses connect, disconnect, shorten, and lengthen.

The old idea was strong and weak synapses. The new idea is connected or not connected synapses via the shortening and lengthening process.

a0571z

The note was created Sept 2012

(synap, neuron)

Micah Blumberg

Can any chemical change in the brain be considered a computation?

Dean

Any computation in the brain requires chemical changes (since the brain primarily employs chemical synapses - not electrical synapses). I'd be careful about claiming the converse however since it is possible that certain chemical changes may have a negligible effect on the resulting computation.

Micah Blumberg

the neurotransmitters in the chemical synapses balance the neuron's charge, while creating a charge imbalance in the next neuronp. so the chemical synapse is also really an electrical synapse :)

Dean

Well, yes, while it's true that both types of synapses are electrical in nature, the two types are classified separately based on their characteristics.

Chemical synapses communicate via movement of ions (atoms containing charges). Since these atoms are physically propagated through the neuron, their movement is much slower than an electrical current. However, these atoms are also much more complex than a simple electron and so carry much more information, providing for much richer computational capacity.

Electrical synapses on the other hand are much faster, but because they cannot induce gain (the amplitude of the electrical signal is generally smaller on the post-synaptic side of the gap junction due to attenuation), and because electrical synapses do not employ receptors and because the sign of the electrical charge is always the same as the source, the amount of computation possible is far less than that of chemical synapses.

a0572z

Note Created Sep 22, 2012

(synap, neuron)

Micah Blumberg

What's the difference between a thought in your mind, and a coordinated sequence of spatially positioned electrical spikes? What's the difference between the electrical activity in a human brain, and a hundred year electrical storm on Jupiter? Is Jupiter thinking?

If Jupiter is thinking, how would we communicate with it?

a storm actually is a loop, a vortex, with an eye at the center, like a human being the hurricane is a dissipative system, it's a cousin

you are a dissipative system, a vortex, a loop, just like a hurricane :) or a storm on Jupiter :)

Pete

How would you detect "thoughts" in systems like this?

What about detecting "thoughts" in higher order systems such as nation states and corporations?

See also: http://en.wikipedia.org/wiki/Matrioshka_brain

Micah Blumberg

love Hofstadter btw, good reference Mark :)

The singularity would be the moment when a computer chip interfaces with the whole cosmos as one super computer :)

Precisely one can make the argument that storms do actually evolve "to ever-increasing complexity and "distance" from its environment." because you are such a storm, even now you are isomorphic to a vortex, your a dissipative system that evolved, the conscious descendent of a hurricane or tornado.

What if the neuron was fiber optic and the action potential was a beam of light instead of an electron? Could you still have intelligence?

do you think the synapses can be remodeled to be triggered by a proton instead of an electron?

We can think without electrical spikes! Wow! This is awesome!

Can any chemical change in the brain be considered a computation?

the neurotransmitters in the chemical synapses balance the neuron's charge, while creating a charge imbalance in the next neuron. so the chemical synapse is also really an electrical synapse :)

Dean

Well, yes, while it's true that both types of synapses are electrical in nature, the two types are classified separately based on their characteristics.

Chemical synapses communicate via movement of ions (atoms containing charges). Since these atoms are physically propagated through the neuron, their movement is much slower than an electrical current. However, these atoms are also much more complex than a simple electron and so carry much more information, providing for much richer computational capacity.

Electrical synapses on the other hand are much faster, but because they cannot induce gain (the amplitude of the electrical signal is generally smaller on the post-synaptic side of the gap junction due to attenuation), and because electrical synapses do not employ receptors and because the sign of the electrical charge is always the same as the source, the amount of computation possible is far less than that of chemical synapses.

a0573z

Apr 6, 2015

(synap, neuron)

Duffy Toler This looks like that acoustic vibration theory of the brain. A thinking system that evolved from meat, using an incredibly slow data transmission rate might just use a bizarre technique like this.

April 3 at 8:51am · Unlike · 2

Micah Blumberg I always like this "Neurons communicate using Action Potentials (APs) that propagate along axons"

rephrase it, and it's like, "neurons communicate with other neurons by sending a signal down the middle of a neuron, between one end of one neuron to the other end of that very same neuron, but not between neurons, that's how we expect you to believe that neurons communicate."

why are there are million publications that insist neurons communicate with a signal that travels through the middle of a neuron?

18 hrs · Edited · Like

Duffy Toler I want to scream, too! But not because of the issue with action potentials, I just want to scream. Screaming into a pillow just doesn't cut it. Maybe I should go out in the woods.

Anyway, what was that about a signal down the middle of a neuron?

April 4 at 3:06pm · Unlike · 2

Micah Blumberg the axon does not extend from one neuron to another, so an action potential on that axon isn't communication, communication implies signals between two cells. the AP Action Potential is not a signal between cells.

why are publications getting this wrong?

April 4 at 10:38pm · Edited · Like

Maxwell Edison Ok, so what is the action potential then?

April 4 at 8:48pm · Like

Micah Blumberg For a neuroscientist it is an indicator or neural activity, it could be seen as a vague indicator that neural communication could be happening, and it is 1% of neural activity. An AP however is not communication between cells.

April 4 at 10:39pm · Edited · Like

Micah Blumberg An action potential "As an action potential travels down the axon, there is a change in polarity across the membrane. The Na⁺ and K⁺ gated ion channels open and close as the membrane reaches the threshold potential. At the beginning of the action potential, the Na⁺ channels open and Na⁺ moves into the axon, causing depolarization. Repolarization occurs when the K⁺ channels open and K⁺ moves out of the axon. This creates a change in polarity between the outside of the cell and the inside. The impulse travels down the axon in one direction only, to the axon terminal."

Micah Blumberg's photo.

April 4 at 10:40pm · Edited · Like · 1

Micah Blumberg As you can see, by the illustration, it doesn't travel between cells, it travels across the axon.

April 4 at 10:41pm · Like · 1

Micah Blumberg The establishment of global experts expects everyone to believe that neurons communicate by something that doesn't travel between neurons, but instead in every illustration travels across part of the middle portion of a neuron called the axon.

18 hrs · Like

Duffy Toler So... like saying a signal traveling just from the amplifier to the speaker in a phone doesn't count as "communication" because that part isn't going phone-to-phone?

18 hrs · Unlike · 2

Micah Blumberg So in your analogy the axon is like the wire that travels between the amplifier and the speaker in the phone. In your analogy the Action Potential is a signal that contains meaningful information?

I am not going to argue that the action potential isn't a part of what our cells do for some of the time that they are communicating.

what travels between the "amplifier to the speaker in a phone" isn't necessarily communication between phones, it might be an alarm clock, it might be music playing. It might accompany communication some high percentage of the time, but it isn't communication itself.

1 hr · Edited · Like

Micah Blumberg I think if you flat out tell people that the Action Potential itself is communication between cells that you are grossly misleading people away from looking at a critical process that needs a much closer examination. There is something else going on with communication between cells that is much more specific and much more important than a rate code. Although a rate code is important, it's a small part of a bigger more complex more nuanced communication device.

1 hr · Like

Micah Blumberg "a signal traveling just from the amplifier to the speaker in a phone" I just keep thinking: "damn, that's a good analogy" I appreciate that one. Really interesting to just think about.

1 hr · Edited · Like

Maxwell Edison The action potential doesn't necessarily have to be a "rate code" as normally spoken about. The presynapse acts as a low-pass filter for the spike train, so what's actually communicated is the train convolved with the synaptic kernel (which is tunable), rather than the spike train itself.

1 hr · Unlike · 1

Micah Blumberg See there are two possibilities here that I need some research on.

One is that the axon terminal is like a speaker, and the rate code of the spiking, via the pre-synapse as a low-pass filter, is like an electric signal. The output of the axon is like a shotgun blast to all the axon terminal branches, and all the synapses.

The other possibility is that the axon terminal is like a phone network, where really one branch of the axon terminal, leading to one neuron out of ten thousand becomes the singular recipient of most of the axon potential signal. In the second scenario when the axon fires it's not blasting out a shotgun of messages to all, instead it is sending a sophisticated message to primarily one specific synapse, or a specific number of synapses but not necessarily all of them.

In the second scenario, the action potential is not communication, but instead it is an energy catalyst for communication, like the power supply of a router is not communication, its just the power supply.

1 hr · Like

a0574z

Note Created Nov 2, 2013

(synap, neuron, hebb)

Micah Blumberg

Well there could always be a problem with the simulation. Doing something for real, in the real world, with hardware, goes around all the potential flaws that could be built into the simulation by the bias of the insiders who are setting "the right level" and deciding "what constitutes a measure of success" besides limiting your strategy to doing a simulation first is modeling, modeling is reductionist thinking.

Monica Anderson

What makes a hardware project that performs to spec different from a software project of the same complexity that passes all unit tests?

This hardware, my software AND SYNAPSES IN BRAINS are all implementations of Learning Machines and what "learning" is is 100% an issue in Epistemology. Get the latter part right before attempting any others. If you don't KNOW what is right at the epistemological level, then find the cheapest way to test it on real problems. And that is (in the current state of technology) going to be a software simulation.

Micah Blumberg

"What makes a hardware project that performs to spec different from a software project of the same complexity that passes all unit tests?" the only answer is at most a hypothesis until you actually do both the hardware and software simulation and see if there are any differences in outcomes. was the software simulation perfect or not? one has to build the hardware to prove it

"If you don't KNOW what is right at the epistemological level" who can know this? at the most one can have a hypothesis, until one actually builds a working model there shouldn't be any belief that anyone knows anything for a fact, it must be proven first

Micah Blumberg

"This hardware, my software AND SYNAPSES IN BRAINS are all implementations of Learning Machines and what "learning" is is 100% an issue in Epistemology. Get the latter part right before attempting any others."

this is the part I'm having trouble articulating a response to. Why does anyone have to figure out the Epistemology issue before they build synaptic analogs? Why does it have to be tested by software to fit some artificially contrived imaginary Epistemology mold, that itself is a reductionist model, first. If it doesn't fit some Epistemology model first it supposedly "doesn't work" how does that make sense? Maybe it works by some Epistemology model no one has thought of yet? Why do we have to get the latter part right before attempting any others. Why do we have to do it the cheapest way? Why does everyone have to be corralled into doing the same way? Isn't it to our advantage if everyone tries something different? All we have are guesses, a hypothesis is a guess until someone proves that their hypothesis is true. UNTIL someone proves their hypothesis is true it is in their interests to NOT TRY TO CURB HOW OTHER PEOPLE ARE DOING IT DIFFERENTLY. No one knows what the wrong ways are because we all only have a guess, a hypothesis, no one knows until they prove it physically with a working AGI. Besides this doesn't say that it is about an attempt to build an AGI, the implied context of AGI isn't actually stated in the article, this proof of concept might be too early for them to be thinking about AGI.

If this device could be made small enough so the "memories" are counted in single eV, then it would be discretized as the synapse (vehicles) and thus robust (if each eV can be kept safe...).

I would also propose a "print now" gate so it would not always learn.

How should this be seen, is it like combining an alternative type of memristor (Stanley William's is based upon TiO₂) with a transistor?

Stanley William's memristor can work as a switch also.

Monica Anderson

We have multiple theories for how synapses work. They picked one of the older and simpler ones. Others have already been published. I happen to have demonstrated to my own satisfaction that what they implemented is insufficient and likely incorrect for any task where we'd need something like a synapse.

I have assumed I'm allowed to critique research? Starting with software simulations they would have found this out sooner and cheaper. The solutions would have been isomorphic at the model level. I'm trying to guide others with similar ideas to take the easier route, which in this case happens to be software. But I have no illusions that anyone believes they "MUST" do it my way on my say-so. Everything on FB is opinion.

I don't see anyone building anything where this kind of stuff would be useful. I could be wrong, but that's my opinion as someone working in the field.

As an example of where this has gone in the past, consider the Connection Machine. Hillis and friends built a very flexible neuron-and-synapse machine but once it was built, didn't know what to do with it.

A recommended approach: Create an open source software library that embodies this synapse algorithm and see who manages to use it in productive ways and what they do with it. Release new versions until more people find it useful. You can design hardware when you know what's needed and what works.

Let me give a couple examples of what I mean by Epistemology. "You can only know what your senses tell you". If something happens behind your back, you will not know. The AI community was told this by McCarthy and Hayes in the Frame Problem paper but they continue to ignore this, creating models of the world and assuming they are correct even when the world changes... and building systems too poorly equipped to handle continues updates and conflicting information.

Another one: "You can only learn what you already almost know" (Winston). This they have only recently taken to heart; that's what Deep Learning is all about. There are many others. Some I discuss in my videos and papers. The most important part is clearly the need for Autonomous Reduction which most AI research is still ignoring.

And the hint that Model Free Methods are available, work well in Bizarre domains, and are widely used in other disciplines should be taken more seriously if we want to make progress towards real AI.

2 hours ago · Like

Dean

While there is still much yet to understand about "how synapses work" at the molecular level (e.g. which particular genes are expressed resulting in the production of specific proteins forming various types of post-synaptic receptors), it's misleading to claim there are "multiple theories".

The general mechanisms involved in synapses are quite well understood, and a good deal of work continues focused on unraveling the molecular details (an entire field of study called proteomics). To get an idea where we are in our understanding at this level I recommend reading some the work published by Seth Grant.

The models implemented in the Blue Brain Project (and now the Human Brain Project) model synapses quite realistically, down to the process of exocytosis on the pre-synaptic side of the synaptic cleft, the binding of neurotransmitters to specific proteins contained within the ion channels on the post-synaptic side, the opening and closing of these voltage and ligand gated ion channels and the subsequent influx or efflux of Na, K, Ca, or Cl, resulting in the depolarization or hyperpolarization of the post-synaptic cell.

Many other models which implement the Hodgkin-Huxley or Izhmikov, or even LIF (leaky integrate and fire) models are less detailed than Markram's models - a trade-off for computational performance reasons, still implement STDP (spike timing dependent plasticity) as the basis of synaptic function. STDP is a form of Hebbian learning that has been empirically verified for well over a decade.

57 minutes ago · Unlike · 1

Monica Anderson

That's a pretty good description of synapse function. How much of that did they get into this hardware?

For that matter, how much of that do Memristors do?

Micah Blumberg

It seems like they are missing the diversity of neurotransmitters which are supposed to allow a neuron to fire in response to a broad contingent of information criteria via millisecond timing expectations. Perhaps they are working with the idea that the diversity of neurotransmitters is altering the timing delay as a whole synapse, because of that idea they think they don't need different kinds of neurotransmitters. Maybe they have simplified the workings of a synapse from advanced understanding, or else they have simplified it to have a simple synapse.

17 minutes ago · Edited · Like · 1

Dean

That's a good question. There's not enough detail in the article to know for sure, but it does mention "just as in a natural synapse, the strength of the connection depends on the time delay in the electrical signal" which could indicate that there is something analogous to STDP involved.

After some digging for the paper, a little more information is found in the abstract of the paper...

"By simulating the time difference between postneuron and preneuron spikes as the input parameter of a gate bias voltage pulse, synaptic spike-timing-dependent plasticity learning behaviour is realized."

<http://www.nature.com/.../ncomms3676/pdf/ncomms3676.pdf>

24 minutes ago · Unlike · 1

Micah Blumberg

I know someone who writes to authors of studies personally, explaining that he does journalism, and he asks for a free copy from the authors themselves and most of the time they just send it.

Monica Anderson

I did not dig out the paper like you did or even find the abstract; so I may have jumped to unwarranted conclusions about this research. It looks a lot more on-the-ball than I thought when I posted this. In fact, reading even the article (not even the paper) more carefully I should have noticed that they did a lot more than I thought they did.

I stand corrected, regarding this paper, and will try to remember to dig deeper before criticizing any research in the future.

Some of my points remain in the general case; past efforts, mostly the memristor crowd's claims of being synapse-like, have been grating on my nerves. But this research didn't deserve my criticism and I wish I could take it back. I won't, I'll let this stand because perhaps I can serve as a warning to others.

Micah points to some limitations of their model that I myself haven't considered in my past work. Perhaps it's me that's been too naïve. I'll need to consider whether those things make sense in

the context of the differently simplified Models of synapses I've been using. To clarify: I make simple models of neurons and synapses myself and I look to Epistemology to tell me whether a simplification is allowed or not. If I can't understand after a careful analysis whether something matters, then I'm more likely to throw it out - at least until I get some experience with what I have so far. Micah and this Harvard group seem to consider MORE than I do in certain areas.

Ah well, live and learn; perform experiments, and learn faster.

a0575z

Jun 29, 2011

this old note needs some work, but the sketch of an idea is there

(synap, neuron)

I had a novel idea for another way that choice could exist at the synaptic scale,

imagine you have five holes in one tube, this represent five synapses in one neuron, each synapse represents a pathway for ions, and each path way represents the detection of an information pattern that adds weight to some future choice, an action which is triggered by the neuron firing the ions are pushed into these pathways like high speed water molecules expanding synaptic/dendritic/soma membranes when you fill up a sufficient quantity of the synaptic pathways you trigger some sort of action related to which pathways were filled up.

ok so lets say you got 6 ions (charged atoms, like sodium) in a dendrite with 8 synapses leading the ions out to extracellular fluid that pressurizes a quantity of 6 ions to be pushed into the synapses of the 8 other neurons, but since there are only 6 ions, you have two neurons that get nothing for their synapses

at the same time for another neuron you have 7 ions in a dendrite with 3 synapses leading ions to extra cellular space for 3 other neurons, so if you divide the 7 extra ions pushed into extracellular fluid, and assume that in theory you would divide 7 by the 3 receiving receptors of the neurons adjacent to that extra cellular fluid, so two synapses leading to two different neurons might get 2 ions each, and a third synapse that may or may not belong to a third neuron or maybe the first neuron might get the remaining 3 ions.

Suppose also, to make this thought experiment interesting, is that one of the neurons that received an ion from the first set of ions was the same neuron that received 3 ions from the second set of ions, and that the 4 ions are enough to push that neuron's threshold over causing the soma burst, and the action potential event, so that neuron has received a sum of input data, in the form of extracellular ions, pushed into its receptors, that caused an action to happen.

In a sense it mechanically summed up the information criteria it received from neurons detecting information nearby and that triggered the choice to act.

(wow that is a mess, an interesting mess, but I think I'm saying that information is detected and weighed in the brain that that physical balancing of incoming detected information is what tips the balance of choice towards one outcome or another)

choice is the complexity of options
two people in one vortex
each representing a role in a two player game
it's a pattern with more energy than flexibility so more tearing

http://www.ted.com/talks/lang/eng/template_grandin_the_world_needs_all_kinds_of_minds.html

every frequency is stores the variable, apple smell is one frequency variable, apple taste is another frequency variable, frequencies are associate in time, because they are written in brain space. So we convert timed sequences into spacial sequences,

the pathways represent the memory/prediction tree of variables associating with other variables up and down this tree.

the external stimulation is imprinting an electrical image into my brain, the longer I look the deeper the imprint

because it's like a net that is shaped by the electrons hitting it, white light hits five times as hard as black light, meaning parts of the retina that got the white light sent five times as much electrons into the neurons, generating five times as many pathways,

ok so if you have 100 electrons, and they are all bouncing around this network, with five times as many white pathway possible channels as black, then it's more likely the electrons will visit the white pathways (deer in the headlights)

even if the electrons bounce around equally there will always be an increased interest in white light because the mind is growing towards the light, because it's a tree growing toward the light, or roots growing toward the light, Phototropism

it's the same reason young people are attracted to bright lights, Skototropism would be the reason old people shun bright lights

in one case the plant is blooming, in another case the light is overwhelming it

so the light, or the electrons are stimulating "growth response" this grow response forms the statistical number of pathways in each area,

a0576z

(synap, perception, graph, cortex, neuron)

Micah Blumberg

"We never told it during the training, 'This is a cat,'" Google fellow Jeff Dean told the newspaper.
"It basically invented the concept of a cat."

Andreea Epure

This is something similar to the computer who won a chess game against world chess champion! haha...

Micah Blumberg

No actually it's not.

Andreea Epure

why?

Micah Blumberg

Deep Blue, aka the computer that beat the chess champion did this "The system derived its playing strength mainly out of brute force computing power. It was a massively parallel, RS/6000 SP Thin P2SC-based system with 30 nodes, with each node containing a 120 MHz P2SC microprocessor for a total of 30, enhanced with 480 special purpose VLSI chess chips. Its chess playing program was written in C and ran under the AIX operating system. It was capable of evaluating 200 million positions per second, twice as fast as the 1996 version. In June 1997, Deep Blue was the 259th most powerful supercomputer according to the TOP500 list, achieving 11.38 GFLOPS on the High-Performance LINPACK benchmark.[12]"
[http://en.wikipedia.org/wiki/Deep_Blue_\(chess_computer\)](http://en.wikipedia.org/wiki/Deep_Blue_(chess_computer))

Deep Blue (chess computer) - Wikipedia, the free encyclopedia

Micah Blumberg

Google's tech uses "Hierarchy of Memory" the programs simulate what neurons and synapses do. This machine was fed data, randomly selected from youtube, and in looking for significant patterns, (like the neo cortex in humans) it taught itself to recognize cats, it create the concept of the cat automatically, no one told it to focus on cats, no one told it what a cat was.

In a Big Network of Computers, Evidence of Machine Learning

http://www.nytimes.com/2012/06/26/technology/in-a-big-network-of-computers-evidence-of-machine-learning.html?_r=2&smid=tw-nytimetech&seid=auto&pagewanted=all

A neural network of computer processors, fed millions of YouTube videos, taught itself to recognize cats, a feat of significance for fields like speech recognition.

Like · · Share

This is the pdf to google's brain that recognizes cats, human faces, and human bodies,
<http://arxiv.org/pdf/1112.6209v3.pdf>

In a Big Network of Computers, Evidence of Machine Learning

Andreea Epure

Yes I agree, judging the probabilities of everything is a brain inborn skill. I guess the computer that thought itself recognized the probabilities of a cat appearance and then it gave it a name. The same happen to our neural pathways.

Micah Blumberg

The two kinds of computing have vastly different strengths and weaknesses. The point is that the mechanical process of brute force calculations used in deep blue is fundamentally different from the simulation of neural activity in predicting concepts based on noticing significant patterns in spacial/temporal data.

Andreea Epure

Object and face recognition is based on edge extraction and in order one to attain object permanence and object constancy need a certain amount of experience. Face recognition is an inborn human ability. So, recognizing significant patterns in spatial/temporal data on a huge amount of information is guided by trial-error and learning. learning was used in the software that won against the chess player. it was trained and it used previous experience(so called memory). You know, one genetic make-up can lead to specific phenotypes based on the variables included around the genome. Here, the variables are the data: one is chess strategies the other is shape/pattern! It's not sarcasm, but I think it's the same principle.

Micah Blumberg

There are real similarities between the two systems but your writing does not illustrate them. I think I have put you in the position of looking for similarities as a counter argument. That was counter productive of me to do. You would be far better served, in the pursuit of expanding your own knowledge base, to create your own counter argument, to your own argument. To do this, you must abandon the search for similarities, and learn instead about what makes Deep Blue and Google's Cat Recognizing Machine very different. Since you proposed the comparison. I am also researching the differences in order to remake my case with many more references. I think that with your quick analysis illustrated in the previous paragraph here, you would be valuable as a cooperative component in building a case against yourself. If you don't mind the challenge.

Andreea Epure

What I wanted to say is that the cat recognition, from the paper you posted, resembles object and face recognition in humans brain. The two systems are different in humans due to an inborn (genetic) ability of humans to recognise human faces and with training the superior temporal sulcus (fusiform gyrus, if my memory is right) can be active in recognising also cow faces. This ability has been acquired over the course of evolution with learning facial features and genetic

make-up develops it due to highly necessity i survival of the species. Also, <http://www.sciencedaily.com/releases/1999/06/990624080203.htm>, it is known that face region fires at the appearance of novel objects. Object recognition starts with edge extraction(read about gestalt theories, young and young 2002 model so on) and that could trigger a pattern to which (under a high chance of probability of appearance in the model) it allocates a name. I bet the computer did not labeled cats as "cats", not did the other chess software know it's playing. Chess. What I wanted to say that they have a common ground on which captures operate and it's amazing to see the variety of appliances which it disclose. My English is bad and often my ideas are well described. I appoligiese in advance. Also, I know that differences in programs as concrete tools are more than similarities. What interests me is the pattern and silogisms they use to attain this results. Good job!

Brain Region Used In Face Recognition Is Active In New Object Recognition

Micah Blumberg

When a long term memory is made, it involves the creation of a protein, which moves to the nucleus of the neuron, and this protein shape helps instruct how the neuron is connected to other neurons. It's as if the memory is both in the protein, and in the connections that neuron has formed with it's neighbors. Well actually that's only one idea of how long term memory could work in a human brain, as you know there are many ideas, and more comprehensive descriptions. The reason I say this, is that if the protein, is the memory, and all it needs to do is enter the nucleus of a neuron to become an active long term memory, then it is possible that long term memories could move from person to person, through transplants, blood transfusions, or the process of human reproduction. If so, it's possible that inborn traits are really just like any other kind of long term memory.

6 hours ago · Like · 1

Micah Blumberg It was not your English that I took issue with, it was and is your premise. Your premise that defines your filters, for what you data you are looking for, and what data you are disregarding.

<http://www.fastcompany.com/1841365/why-is-google-developing-an-artificial-intelligence?partner>

There's More To Google's Artificial Brain Than Finding Cats On The Internet

www.fastcompany.com

Google's X lab is home to many wonders, but perhaps none so science-fiction-soun...

See More

6 hours ago · Like ·

Micah Blumberg by the way the article you shared was dated June 24, 1999

6 hours ago · Like

Andreea Epure What I am looking for is similarities between brain specialisation and artificial computation. I agree that chess and cats stuff are different, but they started from the same premises. My interest is related to cognitive neuroscience and it's computer based approaches.

The google artificial brain resemble the ventral pathway of the visual system. That's what I wanted to say in my anterior comments more than similarities between chess and cats.

6 hours ago via mobile · Like

Andreea Epure Lovely to chat on this topic! X

6 hours ago via mobile · Like

Micah Blumberg What you said is exactly what I am trying to tell you is wrong

6 hours ago · Like

Micah Blumberg but I can't just tell you it's wrong, because you filtering out the data you should be looking at, and filtering in the data that supports your belief

6 hours ago · Like

Andreea Epure Why is it wrong? I am chatting from my phone and all the papers I have are on my pc. I am working also atm. Would you like to tell me what's your opinion on how the google stuff resemble brain structure and functions? Many thanks

6 hours ago via mobile · Like

Micah Blumberg No, because then I would be doing research for you, and I won't do that.

6 hours ago · Like

Micah Blumberg It's friendly enough to point out that looking for similarities between the Blue Brain and Google Brain is backwards, when you would be better served, in achieving your goal, of understanding the similarities between cognitive science and neurology, by first understanding the major differences in theory between what the Blue Brain did, and what the Google brain did, because they are profoundly different, and if you don't research it for yourself, then you will filter out acceptance of any idea I share with you.

6 hours ago · Like

Micah Blumberg As you have done already.

6 hours ago · Like

Micah Blumberg On several occasions.

6 hours ago · Like

Andreea Epure You know, I feel your point in here and you started a very long argument on my comment when I said that a computer won a chess game against the world chess champion. There I wanted to emphasise the idea that computers can learn and they can...

[See More](#)

6 hours ago via mobile · Like

Micah Blumberg "This is something similar to the computer who won a chess game against world chess champion! haha..."

The paper I posted on google stuff backs up the counter argument to your original claim as quoted above. The google brain is like the h...

See More

5 hours ago · Like

Micah Blumberg it would be like a random computer deciding to learn chess to beat a chess champion

5 hours ago · Like

Micah Blumberg that would just never happen with conventional AI

5 hours ago · Like

Micah Blumberg conventional artificial intelligence is different, fundamentally different, from simulated neurology

5 hours ago · Like

Micah Blumberg It took me years to understand this

5 hours ago · Like

Micah Blumberg that's why my telling you this is not going to be enough

5 hours ago · Like

Micah Blumberg you have to find out for yourself

5 hours ago · Like

Micah Blumberg If you simply read the google brain pdf that I linked above, with new filters for looking for and understanding the differences between previous facial recognition approaches, and their new facial recognition approaches you would begin to realize something valuable in terms of understanding the similarities between machines and human brains by understanding the differences between machines and previous machines. These distinctions add whole dimensions of understanding to what the human brain is doing.

5 hours ago · Like

Andreea Epure Hey, you put word into my mouth!! What I have said is not going against what you claim, I think it's complementary. Yes , I made a statement about chess stuff, and then I only talk about the visual perception and how it resemble what google people did. I Might be biased now, but I am still keeping my idea that google cat experiment resemble at a very high level human visual perception. Also, i don't know if that computer decided by itself to select YouTube videos and analyse then and then it said, wow I found virtual cats! It was trained, if you read the paper you will found out that it was trained! The chess software(that we've learnt at school, did not read your deep blue stuff) was created pretty similar, but for different purposes. I guess I understand pretty well artificial intelligence, and if it took years for you it does not mean that it's going to ale years for others(not talking about myself, but in general). I am not interested in the concrete world, cos its ever-changing! When I get to a pc I will show you a few models of what I am talking about. And don't forget that evolution brings up the usefulness of predecessors! You can't talk about human brain ignoring the brain of Apes ! Everything has its own value and all we do leads to future developments. The moral reasons are not the use or aim of science!

5 hours ago via mobile · Like

Micah Blumberg It seems that the google brain built it's own high level conceptual abstraction of the features of a cat, without being asked, without being trained, and it was a complete surprise. Unlike the chess stuff, they did not instruct this google brain on what to learn, they just fed it random images from youtube. They did not choose the images. They did not tell it to learn cats or human bodies. If you read the pdf more closely you would see this. Conventional AI does not create it's own concepts.

5 hours ago · Like

Richard Pomfret As much as I've found each of your points fascinating, I'd just like to interject for a moment and say...I fucking love Google. These peoples have a much better chance of evolving A.I to a degree where real object recognition is possible then the Blue Brain project (not to be confused with the Deep Blue chess software). If anyone will make Skynet a reality, it'll be Google. ;)

4 hours ago · Unlike · 2

Richard Pomfret p.s. I'm very impressed that Google have managed to create A.I that can create a concept of a cat and identify it from....not just stationary 2D images but moving youtube footage. That's a leap forward too. I guess it confirms what we all suspect, dogs are wankers.

4 hours ago · Like · 1

Micah Blumberg I keep trying to make a distinction between conventional AI and simulating neurology in a machine, but when you reply, it's as if you don't know that this distinction exists. Further it seems that you are very insistent that this distinction doesn't exist, as illustrated by your previously mentioned belief that computers will rival human intelligence when they can match the raw processing numbers achievable in the human brain. It's not simply a matter of raw processing numbers. It's a matter of a distinction that I can't even tell you about, because your mind seems set to filter out even the existence of this distinction, as if computer processors and human brains were the same machine only with different processing capabilities. It's like thinking that a refrigerator is the same as a ultra sonic jet, with the only different being how many cylinders it has. Then when someone like me tries to say that Ultra Sonic Jets and Refrigerators are profoundly different machines with profoundly different ideas behind them. It's like your saying "No I don't think so, I'm pretty sure Ultra Sonic Jets and Refrigerators are the same thing, they both consist of metal parts, contain engines, coolant, give off heat, pretty much a more powerful refrigerator will become an Ultra Sonic Jet someday." It's like thinking that traditional AI will someday be really intelligent. It won't. It's like not realizing that computing that simulates Neurology is an Ultra Sonic Jet, and Not traditional AI which is more like a Refrigerator.

4 hours ago · Edited · Like

Micah Blumberg "can create a concept of a cat and identify it from....not just stationary 2D images but moving youtube footage. " you didn't really read the pdf either Richard. It's not significant at all that it can create a concept of a cat, what's significant is that it did it without being instructed to do so, second it did not scan moving youtube video, it learned from static

images that were extracted from youtube video. Third a youtube video is just a stack of stationary 2d images for a computer, it doesn't perceive it as a video.

4 hours ago · Like

Micah Blumberg If you built a traditional computer with traditional AI the size of earth, with 10 billion times the processing capability of all human minds combined, it would still not think for itself, it would still not create it's own concepts, it would still not be self aware. It would still be a refrigerator.

4 hours ago · Like

Richard Pomfret Static 2d images? Pfft. Yep, I was caught up in another chain of thought regarding emulating visual systems/depth perception in software.

4 hours ago · Like

Andreea Epure I do not think I created this group to see who knows more, but to be calm and discuss around topics. I see that you are against my person and not on what I've said, my biases, not my ideas. And yet, you did not see my idea! I did not say that your refrigerator is a supersonic jet sky , I said that both are using electricity, therefore the possibility of building something even better is on the technology side. Evolution is motion. And yea, is still going there, but all what I said is based on how the it labelled cats Images as cats, and I wasn't so amazed that it did! I asked how did it do it!!!! Get it now ? What you say is completely different from my statements, and yet so helpful! I am talking about neural pathways and you about artificial intelligence. It was interesting to find out more about differences, and yet nice to see that nature and even technology when left by itself copies nature features!

4 hours ago via mobile · Like

Andreea Epure Yes Richard you are right. Object constancy and face recognition are amazing stuff done by google scientific discoveries and they really represent their company! yet its still an issue if dog are wankers...

4 hours ago via mobile · Like

Andreea Epure Moreover: I WANT TO WORK FOR GOOGLE! Xxx

4 hours ago via mobile · Like

Micah Blumberg Please don't take it personal. I was arguing against a premise you put forth that google brain and the chess computer that beat a world champion were the same. I have no issue with you personally.

All my statements are meant to be valuable in and helpful, as you noted. I don't think of things in terms of my idea or your idea. They are just ideas man. I'm not identified with any idea, position, belief, viewpoint, or perspective.

2 minutes ago · Like

a0577z

May 15, 2012

(synap, cortex, neuron)

Micah Blumberg

What do you think Ben? Is this a plausible form of real intelligence at work?

How Trees Communicate (Video) - Waking Times : Waking Times

www.wakingtimes.com

Researchers at the University of British Columbia are concluding that trees are interacting with one another in a symbiotic relationship that helps the trees to survive. Connected by fungi, the underground root systems of plants and trees are transferring carbon and nitrogen back and forth between ...

Ben Thomas

Sounds like a buncha goddam hippie crap to me.

Seriously, though, I've found these studies fascinating since I first found out about them. They're definitely thought-provoking.

I think the question really depends on the definition of "communication." Cells in a sponge or slime mold communicate with one another in an organized fashion. By the same token, you could argue (and some have) that ant colonies and beehives are actually meta-organisms whose individual members correspond to the neurons in a brain. But no one (as far as I know) is going around saying these organisms and meta-organisms have anything like a true CNS.

I think the main distinguishing factor between those informational architectures and, say, a vertebrate brain is that their communication patterns are emergent and bottom-up; there's no corresponding network of inhibitory connections that interfaces with the bottom-up network and imposes order on it in any centralized way. Another major point is that these networks lack the kind of fractal symmetry that's very obvious in functional nodal architectures even in the nervous systems of simple organisms like *C. elegans*.

I'm not ruling out the possibility that these fungal networks could have evolved built-in checks for factors like stimulus salience, etc. - but I'd say calling it "consciousness" is reaaaally stretching it. Especially since we still don't have a precise scientific definition for "consciousness."

about an hour ago · Unlike · 1

Micah Blumberg

"corresponding network of inhibitory connections that interfaces with the bottom-up network and imposes order on it in any centralized way" this was very interesting, I hadn't thought of my inhibitions as imposing order in a centralized way, in fact I usually think of my neural patterns as packs of wrestling dogs competing for dominance by inhibiting their neighbors until only one pattern reigns supreme, sort of like a three dimensional game of GO. Much mor chaotic than a centralized imposition of order.

about an hour ago · Like · 1

Ben Thomas

"Packs of wrestling dogs" is, on the whole, not a bad analogy for the experience of being conscious. I didn't mean your personal inhibitions, though; I meant the networks of inhibitory neural connections that impose order on the excitatory connections in other parts of a certain functional network, helping shape activity in a goal-directed fashion - for example, the inhibitory cortico-thalamic connections we find in thalamo-cortico-thalamic circuits.

about an hour ago · Unlike · 1

Micah Blumberg

our life experiences shape the strengths of different pathways in the neo cortex resulting in a modeling of sensory input and the significant links between what we sense and favorable outcomes, resulting in a consciousness that can be reduced in its function to a memory based prediction resulting in the coordination of our whole structure.

about an hour ago · Like

Ben Thomas

yes, that's true...i'm not clear on what exactly that has to do with inhibitory/excitatory synaptic connections, though.

about an hour ago · Like

Micah Blumberg

When I said my inhibitions I actually meant what you meant, the inhibitory neurons in the neocortex that regulate impulses from the lower brain structures, in addition nearby neurons, carving out a highly complex neural path that generates highly complex thought, and coordination.

about an hour ago · Like

Ben Thomas

OK, I think I understand what you're saying now - neither inhibitory nor excitatory activity is more centralized than the other; it's the tension between the two that emergently generates complex thought. Yeah?

about an hour ago · Unlike · 1

Micah Blumberg

When you were giving your speech at TEDx I remember thinking that your dark continent analogy was really cool, but if we magnified the brain so that a neuron was the size of a star we would be talking about something that is bigger and more complex than the milkyway galaxy. I think that yes there is back and forth excitation and inhibition between the lower structures and the higher structures, but vastly more so whats interesting in the development of neural patterns is taking place almost entirely within the neocortex, yes shaped to a small and not insignificant extent by interacts with the lower structures, but you could say that most of the experience of being human is taking place in the very top of the human brain. Its mostly about the competition between energy surging through rival pathways strengthened or weakened by life experience in the neo cortex.

9 minutes ago · Like · 1

a0578z

Note from Jul 19, 2012 - Hippocrates quote
Quantum Sensors, Closed Loop Therapy

Quantum Sensors

These quantum sensors are believed to be much more accurate than either EEG or fMRI scanners, due in part to the fact that the sensors can get closer to the skull. The closer proximity of the sensors to the brain can not only improve the spatial, but also the temporal resolution of the results. This double improvement of both time and space accuracy is highly significant as it means brain signals can be tracked in ways that are inaccessible to other types of sensors.
<https://www.sciencedaily.com/releases/2021/11/211118203739.htm>

Combine with Sharp Wave Ripples SWP / Oscillat

Traveling Nature of Brain Waves may help working memory work

"An especially underappreciated aspect of the phenomenon is that waves spatially propagate, or "travel," through brain regions over time." activating brain areas with rhythmic oscillator & varying rotational (sometimes clockwise, sometimes counter clockwise, with different directions being associated with different conscious & behavior activity patterns.)

https://neurosciencenews.com/prefrontal-cortex-waves-memory-19988/?fbclid=IwAR1tRtgu6tLVKwJAIZPBWxQulpw16XGw1IkYnoyRzA9mDJzHH_5PMgG--aM

These activating patterns are activating parts of the rendering that makes up your experience of reality, all the things you hear, sense, see, feel, and so on.

Aristotle suggested theoretical thinkers like Aristotle haven't spent time with brain damaged patients, the sick and the dying, observing and documenting neurological disorder's with objective tools like Hippocrates did.

http://www.huffingtonpost.com/michael-graziano/the-spirit-dies-when-the-brain-dies_b_983852.html

"Men ought to know that from the brain, and from the brain only, arise our pleasures, joys, laughter and jests, as well as our sorrows, pains, griefs and tears. Through it, in particular, we think, see, hear, and distinguish the ugly from the beautiful, the bad from the good, the pleasant from the unpleasant..." quote Hippocrates

a0579z

Sep 4, 2013

(thalamus, cortex, neuron)

The meaning of spacetime and numbers is known only to the mind because it exists only in the context of movement, and the causes of movement, tempo-spatial patterns are tracked by billions of neurons from the hypothalamus to two interconnected mirroring grids in the neocortex, allowing a model of reality to be self aware while tracking all the causes of movement that include itself. There is no meaning outside the context of movement.

a0580z

(vector, neuron)

Note created on Oct 13, 2012,

<http://www.transparentcorp.com/dl/> Is this the program you recommended?

mental stimulation that is not addictive.

it increases connections in the mind, which means new insights, and may eventually mean a new understanding that is a new connection between behaviors, rewards, consequences, and inhibitions, effectively replacing unresourceful behaviors like addiction with better behaviors, but it may feel like you are choosing a better path after having an insight that makes sense to you, at the same time it provides relief from addiction by stimulating those neurons and causing them to release the neurotransmitters that would otherwise be released by whatever the person is addicted to.

however since it's a general stimulation, without a chemical signature, there is nothing for your neural receptors (which receive your neuro transmitters) to actually become addicted to.

Brainwaves

okay now imagine that intelligence is in the links, the connections between neurons that are firing, have fired, or are ready to fire, that's where the patterns are that are basically spatial vectors.

then the brainwave is what is lighting up

it's the bits that are conscious or subconscious (ready to light up because other stuff is lighting up)

and all the brainwave is, is a discharge, a potential difference, from each point in the network that has lit up, that is triggering more potential differences (discharges) until the brain has equalized the electrical positives and negatives
seems pretty simple huh?

you know your brain does some amazing brainstorming when it's asleep right?

good problem solution finding time

people mistakenly think they are resting when they are sleeping

but brainscans show that isn't true

oh my memory has gotten so good

that I write down my thoughts, from my dreams, after I wake up

my mind is like a super computer now

with this one day your the mind can throw a curve ball at you where one day you wake up, and your whole life will be integrated in ways you never thought possible before.

it's like having more of the stuff you love all in one place

some say it's an expansion of awareness, imagine if you were experiencing 2 percent of your life, and then suddenly you were experiencing 35 percent of your life, it's almost like getting more life

but when you were experiencing 2 percent, you thought that was 100%

yes, partly, sometimes you can think of it as going from a world that was black and white, to a world that is color, to a world that is 480p to a world that is 720p to a world that is 1080p, to a world that is 2048x.... you get the idea

I recommend a strategy of diversification of sources of stimulation.

get some sleep, super computer dreams

a0581z

Note created Jun 27, 2012

Interesting note, but not really for the book, it can be uploaded to the server
(synap, neuron)

I don't usually think of the brain as something that is in a hierarchical relationship with the heart and cells.

I also think of intelligence, in both the brain and heart, as a naturally compassionate, creative, interested and loving. Naturally I see brain, heart, and cells as all sharing the same kinds of compassion, memory, wisdom, empathy, consideration for others, ethical values, and high standards. Yet I see them all acting as one system, because they are working together to do this being.

Micah Blumberg

The brain chooses to be aligned with the heart, because it loves the heart. It's not a master/slave relationship. It's a relationship of win/win, mutual interests, mutual prosperity. Brain heart and cells I think of as one energy

A. Rose

correct.. but the cells of the body are different from the brain.. So body memory, healing, and action are required to compliment any brain system. in short, you cannot simply change your mind about something in your brain.. You have to work on the body/cellular level as well.. Heart transplant memory, for example stays with the heart inside the new body.

Micah Blumberg

wow that is interesting

so if someone gets a heart transplant, it's like getting a new soul?

will the new heart change the person's personality?

A. Rose

Yes, it has happened time and again.. I'll find an article and link for you if you want. The desires and tastes of the person change! this is why when somebody has experienced trauma as so many have, it's important that we work with them to heal on the cellular/physical level, not just the brain.. The cells have consciousness entirely separate from the brain cells

Micah Blumberg

After you mentioned it I did a search and found several articles. Still if you know of a particularly good article I am still interested in the topic, and I would love to read it!

Micah Blumberg

I have read a lot more. It seems like it's too early of an idea, with not enough scientific backing.

1. having the nerves from the heart to the brain severed is going to cause a real profound effect on a person. 2. the powerful drugs used on transplant patients are going to have a real profound effect on a person. 3. The existence of new personality traits, desires, and behaviors that previously existed in the transplant donor is possible but on very shaky ground evidence wise. One reason is that the transplanted heart is basically being used as a pump, there are no nerve connections with the brain like the patient had with their original heart, so the new heart does not have a direction connection to the brain. So if the new heart is causing the changes in person's preferences, it's probably very different from two lovers who spend a lot of time with one another beginning to adopt some of the other person's preferences over time.

Micah Blumberg

I meant to say

, it's probably NOT very different from two lovers who spend a lot of time with one another beginning to adopt some of the other person's preferences over time.

Micah Blumberg

It is thought that a protein has to be made for a long term memory to be stored, this protein then moves to the nucleus of the neuron and directs the pattern of synaptic connections with other neurons forming the memory. This is true of neurons whether they are in the heart or in the brain. So if some of the proteins, representing long term memories, from the transplanted heart move through the blood stream to the brain, they might embed that person's mind with memories of another person's life.

Micah Blumberg

The key realization, is that all this speculation is on shaky ground, it's not confirmed for sure. So that's why I am careful to not phrase stuff about the mind and heart in an authoritative way, it could be that way.

A. Rose

Well it's been proven that cells of the body have consciousness and their own memory, and these stories exist like the one I told you of. I haven't had a free moment to look up the exact cases, but I believe that the heart has consciousness as does every cell of the body.. I believe that the brain is simply a tool to process the consciousness from the body memory, and to process, simulate consciousness. But it is not the actual source of consciousness. It is simply the human way of processing intelligence. That's the tantric philosopher in me talking now, but soon I'll look up some of those articles and send them to you but I don't have time tonight.

Micah Blumberg

If you can accept that thoughts continue to have life even after a person's so-called death, then you must admit that the brain is not the source or originator of all thoughts.

Like · · 35 minutes ago ·

If you write your thoughts down, then they persist in written form after you die. If you tell them to another person, then they exist in that other person's mind after you die. If you never communicated what you were thinking, and your thoughts were not extracted artificially from your body post mortem (no one I know knows how to do this yet) then probably your thoughts are lost. That's just my bet. Some people who have passed beyond this world continue to have influence, but I think that is because they have made a memory impression that has become encoded in our species and in spacetime.

A. Rose

"the brain itself is a hologram created by consciousness which, in turn, mimics this fundamental act by creating holograms of its own... ones we refer to as "the world out there"... we essentially live in a "hologram within a hologram"... unfortunately, reductionists would only scoff at this absurd proposal ;)) ... Amit Goswami

What I think is unfortunate is the labeling "reductionists" I'm going to get labelled if I dare to think for myself and consider another perspective apart from the gospel of Amit Goswami.

The hologram within a hologram theory has skeptics, not because people are against the hologram theory, but because brains are betting machines, they bet for and or against all kinds of theories. If a theory has a short term reputation in cultural memory, and is lacking a lot of science backed evidence, then naturally your going to find many betting machines (human brains) betting against it, and probably the same number betting in favor of it. Lets not label the people who are betting differently.

If reality was a hologram, and your brain was a hologram, that would mean that all the information was stored everywhere simultaneously. Obviously this is not the case, because if it was the case, no one would ever forget anything, we would all be all knowing, there would be nothing to learn ever, because all that there is to know would already be known by every cell everywhere.

I think that communication from the departed can be understood as a simulation done by minds that are still alive, created by the collective unconscious so to speak.

I think that consciousness is just a simulation anyways, it's an effect, a result of what life does, that includes cells, hearts and brains.

Micah Blumberg

What I keep coming back to is arguing against my own strawman. You think perhaps that Micah wants to say that the brain is god, and that I want to reduce all of intelligence to something that is created by the brain alone. However that is not my view, it's not my argument, it's not my position. I don't believe that.

What I think instead is that intelligence is memory-prediction, a betting memory, and like you I believe that cells, hearts, and brains are all intelligent. They are all doing memory-bets

all life is intelligent, and all intelligence is memory-prediction

even if you die, your memory is not just a memory, it's a memory-prediction, and your memory-prediction will continue to develop in the minds of other people who knew you, probably very accurately

if they knew you very well

to say that "Consciousness" is much bigger than a gamble I think is normal. it is more than a gamble, it's a gamble that learns, it's a learning gamble., that's memory-prediction,

Micah Blumberg

I am not my brain, I am a memory prediction. When I'm in my brain, I control it, the brain and body become my space suit. When the space suit is lost, part of me will probably be lost, but parts of me will likely stay, in a manner of speaking, as memory-predictions that exist in other minds. You might also say I am not my memory-predictions. The prediction of a self is not me, I am not these words, not these thoughts, these thoughts are just thoughts, they do not define me.

Micah Blumberg

However the second I say that "I am awareness" or I am really spacetime, or I am really all of it, or I am everything and nothing, that becomes another memory-prediction that I'm not. I'm still not that. I'm not not that either. I'm that and not that. So when I die, if part of me is lost, it won't matter, because it was never truly me. Information is lost sometimes, and the only that is lost is information.

Tags:

memory-prediction

a0583z

Sep 22, 2012

What's the difference between a thought in your mind, and a coordinated sequence of spatially positioned electrical spikes? What's the difference between the electrical activity in a human brain, and a hundred year electrical storm on Jupiter? Is Jupiter thinking?

Daniel Hayato Thomas
Thomas The perspective

Micah Blumberg
Will you please say more about what you mean by that Daniel?

Daniel Hayato Thomas
yes ;)

Micah Blumberg
If Jupiter is thinking, how would we communicate with it?

Daniel Hayato Thomas
ok, but seriously I gotta run in a few minutes so I can't go into detail but consider that if a human subject was dissected there's no substance to the thoughts other than maybe those electrical spikes
In fact you could say that there are no thoughts, just those electrical spikes, yet shift the perspective a bit and the experimenter should be (unless it is an automaton) having very real experiences of thoughts
As to communicating with jupiter, I guess drag the question back a step and ask if a person is thinking how do we communicate with them?
ps. Read Zizek for more inspiration on this, and to drag this back on topic It's interesting that Lacan and Baidou's (who are major inspirations for Zizek) thought relates strongly to catagory theory
7 hours ago · Unlike · 2

Micah Blumberg
Slavoj Žižek?
Oh I wasn't looking for a philosophy answer but thanks

Mark Waser
If it is a self-referential, self-modifying *evolving* loop, it is a thinking entity (see Hofstadter's I Am A Strange Loop). Unless the hundred year storm is evolving and progressing, it's not particularly interesting as a "mind".

Micah Blumberg
a storm actually is a loop, a vortex, with an eye at the center, like a human being the hurricane is a dissipative system, it's a cousin

Micah Blumberg

you are a dissipative system, a vortex, a loop, just like a hurricane :) or a storm on Jupiter :)

Peter Rothman How would you detect "thoughts" in systems like this? What about detecting "thoughts" in higher order systems such as nation states and corporations?

See also: http://en.wikipedia.org/wiki/Matrioshka_brain

Micah Blumberg

love Hofstadter btw, good reference Mark :)

Peter Rothman

That is to say, it seems to be a subject that might be amenable to scientific experiment and measurement.

Micah Blumberg

Yes, you just blew my mind Peter! Thanks :)

Peter Rothman

You will like an article I am working on for h+ to appear this week then. Trying to put some real evidence around the computational singularity idea, and there is some BTW, but also some of these upper bounds come up because you have super-exponential growth that otherwise would reach infinity in a finite amount of time. Since we think that can't happen, we have to have some other effect that prevents it, i.e. a limit on the further reductions in CPU sizes, memory per unit volume, energy efficiency etc.

Micah Blumberg

The singularity would be the moment when a computer chip interfaces with the whole cosmos as one super computer :)

Micah Blumberg

oops that already happened :P

Mark Waser

A storm is a loop but it does not continue evolving to ever-increasing complexity and "distance" from its environment.

Mark Waser

Thoughts, in the form of memes, are "obvious" in higher order systems like nation states, corporations, and other communities.

The real problem with storms as thoughts is that they don't *ever* play well with each other.

Micah Blumberg

Precisely one can make the argument that storms do actually evolve "to ever-increasing complexity and "distance" from its environment." because you are such a storm, even now you

are isomorphic to a vortex, your a dissipative system that evolved, the conscious descendent of a hurricane or tornado.

a0585z ctp if you take one part of the brain and magnify it another the other then that is how one memory-prediction becomes the focus of the rest of the brain and body

imagine that a cell is an object in category theory, and its messages sent & rec are morphisms, that transform the identity

cell so it takes the inputs, pools them? to calculate its response

like the quantity of identical receptors ought to determine which genes will respond and how many will respond, its a spatial threshold mechanism for the cell to determine its response

the set of all elements inside a cell does not need to be know exactly because the composition table or the multiplatication table

cellular communication is like a multiplication of signal types to unlock threshold limited reactions from genes, proteins and cell functions

and cells are "learning" by changing from the influx of signals, to attain a new state

so what missing from category theory is a statement management for identity

because identity refers to a single state of a transformation, the morphism points to another state but if you want to describe how two states are transforming each other, we need the set of transformations under identities

feelings and emotions could be the information of threshold changes in chemical signalling actually, the information encoded in the phase changes of chemical signals initiating genetic changes

self aware networks: human level sentient computing

a0586z

A Neuron has been compared to a telegraph, a clock, a geiger counter (in the book Sync by Stephen Strogatz and the book

The Secret Language of Cells - Jon Lieff, MD, plus in many papers & texts)

array node

glutamate receptor thresholds, dendrite branch thresholds, allows for precise detection of partial patterns over time so that a unique pattern completion a detect based on the branches of inputs at each level of the networked sensor, and when they all light up its like saying this pattern is remembered to the rest of the network, represented by the connections in the exit terminal.

receptor thresholds, dendrite & soma thresholds, then the sensor fires when its learned representation is recognized,

a0588z

(perception) GAMMA BRAIN WAVES: 30/34 – 100+ Hz (cycles per second)

Gamma waves are the brain's optimal frequency associated with increased compassion, optimal brain function, awareness of reality and increased mental abilities. Though more rapid than beta waves, gamma brainwaves have virtually unnoticeable amplitude and can be found in every part of the brain. Gamma waves serve as a binding mechanism between all parts of the brain and help to improve brain function and perception.

BETA BRAIN WAVES: 12-30/34 Hz (cycles per second)

Beta brain waves are known as the awake state, indicating a strongly engaged mind. The Beta brainwave state is where we focus, learn, create, study, memorize, write and function in our day to day lives. Low Beta is associated with concentration and alertness and higher levels of Beta activity are associated with stress, anxiety and fight or flight reactions. Lack of low beta activity is associated with disorders such as depression, ADD, addiction, OCD and other anxiety disorders.

These are the waves of alertness, wakeful state. Most common and most prevalent in the brain. If you are alert and awake, you are in Beta now.

Beta are the brainwaves of our "normal" waking consciousness, of our outward attention, of logical, conscious and analytical thinking. High frequency beta ("splayed beta") is seen with restlessness, stress, anxiety, panic or while our inner critic or commentator is active. Splayed beta can be differentiated from the low frequency beta of the awakened mind, when thinking feels clear, alert, creative and to the point.

ALPHA BRAIN WAVES: 8-12 Hz (cycles per second)

Alpha is a state of relaxation and daydreaming and the state associated with pre-sleep and pre-waking drowsiness. Alpha brainwaves are associated with an effortless state of consciousness. Watching television can induce your mind to slip from Beta to the Alpha state, and children tend to play in Alpha. Serotonin release occurs in the Alpha brain wave state, at about 10 Hz.

Associated with relaxed wakefulness, and creative thought where attention may wander and free association is favored. They are also correlated with a generally tranquil, pleasant, almost floating feeling.

Alpha brainwaves (14 - 8 Hz) are seen when we are in a relaxed state, daydreaming or visualizing ("sensualizing" seems to be more appropriate as imagination in all senses - hearing, kinaesthetic, smell, taste etc. - stimulates alpha waves. Your visual sense may not necessarily be the strongest for you. Some people rather feel an inner knowing). We need alpha waves as the bridge to the lower frequencies of the subconscious (theta), if we want to remember the content

of our dreams or our meditation, or if we want to retrieve information from our subconscious. For this reason alpha is especially important in combination with other brainwaves.

THETA BRAIN WAVES: 4-8 Hz (cycles per second)

Theta brainwaves are the second slowest brainwave activity. Theta occurs when your conscious mind is disengaged, such as in dreaming sleep, REM (rapid eye movement) sleep and deep meditation or self hypnosis. Many adults only attain the Theta brainwave state in their sleep, and can not seem to reach or sustain the Theta state when they are awake. Interestingly, the planet Earth resonates at a Theta frequency of 7.83 Hz, a frequency known as Schumann Resonances.

The theta-state is described by sleep researchers as stage 1 sleep or the twilight state. In this states subjects pass out of the alert alpha-state into a theta-state in which they lose their sense of lying in bed, though still being awake.

Theta (7 - 4 Hz) represents the subconscious. We see theta during dream sleep (REM sleep), meditation, during peak experiences and creative states. In theta we find unconscious or suppressed parts of our psyche as well as our creativity and spirituality. Theta images are usually less distinct and colorful than alpha images, sometimes of a blueish color, but they often feel more profound and meaningful. As long as we only produce theta brainwaves, their content will stay inaccessible to our waking mind. We need alpha to bridge the gap between theta and beta brainwaves to consciously experience or remember theta content.

DELTA BRAIN WAVES: 0-4 Hz (cycles per second)

Delta brainwaves are the slowest brainwave activity. Delta brain waves occur during deep, dreamless sleep and are seen predominantly in newborns and infants. Delta brainwaves rarely occur in adults.

Associated with deep dreamless sleep. Consistently observed in deep sleep. The deeper the sleep, the higher is the amount of delta waves.

Delta brainwaves (3 - 0,5 Hz) are the brainwaves of the lowest frequency and represent the unconscious. If we only produce delta we will find us in dreamless deep sleep, but we also see delta in various combinations with other brainwaves. They may then represent intuition, curiosity, a kind of radar, hunches or a "feeling" for situations and other people. Delta is often seen with people who work in therapeutic environments or professions and with people who have had traumatic experiences and have developed a "radar" for difficult situations.

a0589z

We evolved to pass down Cultural Identity Software

(The human mind is essentially software that we learn & copy from one another passing our "identity software" down through the ages. I wrote a short story about the Tetris effect on the

brain and about how I feel like I become the protagonist of some movies after I watch them. This is)

Are you like me with the sort of mind that seems to temporally absorb the traits, persona, and characteristics of any person you really focus on for a significant quantity of time?

I know some of you are thinking that sounds weird, implausible, and possibly mentally ill. Usually I would think the exact same thing, and I would repress that side of myself, but today however I decided to do something different.

I decided to walk embrace the odd chameleon like nature of my weird brain to feel like I am actually becoming whomever I'm aware of for an extended period of time as my superpower instead of my sickness.

Have you ever played a video game, like maybe Tetris for example, until like 3am in the morning and then when you tried to go to sleep you could almost see Tetris blocks falling with your eyes closed as if your brain was trying to keep playing the same thing?

Well today I'm rethinking this situation, in light of Tetris and all the games, and or books, that would keep me awake at night, repeated by my visual cortex, seeping into my dreams, as being very literally related to the odd personality absorbing traits that I seem to have often.

a0590z ctp what needs to be worked out, with regard to dendritic computation, is how the firing of a pyramidal cells ultimately results in the network level detection of the neuron that fired as a representation of its connections

neuron row 1 a neuron first fires

neuron row 2 dendrite spines grow towards first neuron, a new neuron fires inhibiting several others (that magnifies the information rarity information theory)

neuron row 3 the phase rates across the oscillations change, resulting in the eventual deduction of the patterns represented the previous layers fired neurons

many types of teacher cells in the thymus

use dna to max training for tcells

teacher cells use all of their genes at once,

the deluge of protein of protein molecules challenges the t-cells to produce more receptors training consists of being bombarded with protein molecules that train them to build receptor types that can distinguish learned bad shit while not harming normal human cells

Antigens and affinity

a molecule that can trigger an immune response is an antigen

normal molecules are self antigens
they tell t-cells this cell has no problems

t-cells need to recognize self-antigens or else they will attack normal human cells leading to tissue destruction & auto immune diseases

the thymus exam is moroe subtle than turning a switch on or off or providing a yes or no answer about self antigens

t cells have to be attracted to human cells to maintain communication while not attacking

a0591z
Neo Mind Cycle
Intro
Theory
Causes
Location
Videos
Contact
Vision
Packages
Gallery
Reading

Outline of the Vision for Neo Mind Cycle
Neo Mind Cycle is a center for optimizing the memory, performance, intelligence,
Hi John!

I come into Starbucks often enough, and you're cool enough to chat with me. So not only do I know some of your interests. That your an artist! I also know your email address.

Regarding your interesting in smart drugs, aka nootropics, I recommend that you see the film "limitless" as a primer. <http://www.iamrogue.com/limitless/fullsite/html/>

The people who make Google use smart drugs. Currently Modafinil is popular on the Google Campus as a replacement for caffiene. Expect to stay awake and productive for 20+ hours leading to potentially tough changes in your sleep cycle with that. However unlike similar kinds of stimulants Modafinil does not really keep you awake if you really want to sleep and make an effort to do so.

Sleep is very important to good brain health, and so is having a consistantly regular daily pattern of behaviors for the bodies internal 24 hour clock: the circadium rhythm.

There is a particular mind machine (Mindspa) that is useful for resetting the circadian rhythm, for the long term improvement of sleep patterns, and it's available at my office for clients to schedule time for their own use with it.

Another powerful way to enhance your brain's creativity is with the first class Pramracetam, or the business Aniracetam, or the economy class Piracetam (listed in order of how powerful they are) You can find these at <http://cognitivenutrition.com>

I make a living doing brain optimization research, and services including a brain optimization program that allows people to visit my office regularly for weekly sessions of Neurofeedback driven Brainwave Entrainment. The regularity of a once weekly session for ten months with drive long term sustainable improvements in brain chemistry, health, creativity, intelligence, and happiness. Yes it is okay to miss a week. The results of even one session are powerful, noticeable, and cause positive long term results. Including the feeling of a more integrated mind, more connections, more understanding, the profound feeling of expanded awareness, increased calm, more centered anger, faster problem solving. It's good to optimize your brain! There are many ways to do it! I want to share them with everyone!

My website isn't yet complete. You can see a preview at <http://neomindcycle.com>
When my website is complete it's going to be a central resource for all the ways a person can optimize their brain.

Including classes I am currently writing on neurophysics, brainwave theory.

People will learn about the history and theories behind:
Brainwave Entrainment
Neurofeedback (including an overview of different methods and applications.)
Brain Optimization
Transcranial Magnetic Stimulation
tCDS
and
Neo Mind Cycle

As well as common brain illness, the current treatments, the current thought on causes, and the upcoming solutions.

Alzheimers (Diabetes type 3)
Parkinsons
Cancer
Stroke
(Perhaps all caused by inflammation via fastfood)
Brain eating Parasites (under cooked meat, and contaminated water.)

Some words of wisdom of on ideal strategies for people who have family members with brain based illness's.

As well as Brain Imaging Technologies. Such as MEG, HEG, EEG, FMRI, DTI, tCDS.

Also theories of how intelligence works from the greatest minds in both the neurosciences and fields of artificial intelligence, from artificial intuition, to numenta, to google's work on vision.

I help people learn about, and use, easy techniques, practices, and facts to boost the intelligence, health, and creative power of brains.

Neo Mind Cycle is part of a healthy lifestyle, promoting a diversification strategy for mental stimulation on a regular weekly schedule, similar to the idea of muscle confusion in the p90x workout videos, I encourage people to cover their nutritional bases for good brain health, to consider something like a yoga class, and to set aside time once a week for at least an hour of meditation (with ear plugs and a comfortable blindfold)

a0592z

My viewpoint is that biology is computational, we are computers that were developed by natural selection or evolution. My belief, based on the facts that I have learned, is that a special kind of computer program can become conscious and self aware.

In this book I hope to layout the evidence that led me to this conclusion, so that you the reader have sufficient information to come to the same conclusion on your own.

Internal transformations table of contents

a0593z

January 13th, 2014

1/13, 3:13pm

Micah Blumberg

I'm in San Francisco here so I decided to try psychedelics as a brain therapy, with the EEG and isochronic beats at the same time. I saw fractals, and I saw the beginning of the cosmos happen.

a0594z

March 2021

Multimodal neural networks for combining things like video and audio
Is another tool that could
Combine multiple streams of data from sensors
Valve
Eeg, Eye tracking, Heart rate, emg
Eeg, Ecg, Gsr galvanic
Dry electrodes
Realtime data stream?
Denoise the data in real time,
We will be able to use microphones with deep learning to further improve denoising

a0595z ctp like Micah your an entity
what does that mean?

like your mind is a spatial entity analogous to a 3D point cloud of multiple rendered
representations of reality interacting with one another to achieve an entropic goal.

The brain's network is actually a brainwave sequencer, that detects phase patterns and converts
them into rendered spatial temporal conceptual maps of reality and self for this brain thinking
that it is a person when it is a machine exactly.

We are organic machines, organic robots, many of us thinking we have souls

your mind is produced by neurons that pump salt water, so you are just a computer

you have no real choice, but as a neural network you will continually refine your choices, and
make better choices as become aware of better choice so awareness practices can increase
your awareness of your choices

my central thesis is that neurons cluster into arrays and these arrays serve as screens for other
clusters to see

hypothesis tnn8 is the idea that Receptors on a t-cell can act as a neural network in pattern
detection, the question then is can multiple receptors like a pentareceptor detect when multiple
boutons have been triggered?

a0597z
Jon Lief: word search clock, granularity, fractal, jon lief
link together "3d protein structure" with "interception of cell communications"

After I shared this note on June 17th to the public on June 27th a new paper came out of cell
reports claiming that "Hebbian activity-dependent plasticity in white matter" this
[https://www.cell.com/cell-reports/fulltext/S2211-1247\(22\)00733-1?rss=yes&utm_source=dlvr.it&utm_medium=twitter](https://www.cell.com/cell-reports/fulltext/S2211-1247(22)00733-1?rss=yes&utm_source=dlvr.it&utm_medium=twitter)

paper does not credit me anywhere, and it's not clear that any of the authors knew about my work but here I am saying on June 17th and before in this note: "Each cell has threshold functions, it has to detect what its encountering, and it does so by "considering" its activated receptors, its receptors are 3D protein structures that are encoded with learned information, receptors learn with coincident detection that indicates certain patterns that a receptor has been engineered (by evolution) to detect"

every cell has receptors that have thresholds for firing, so every cell can do hebbian learning
see note a0011z Cellular Oscillating Tomography
<https://github.com/v5ma/selfawarenetworks/blob/main/a0011z.md>

monitor/medical imaging
communication signals
3D biological structures
biological functions which amount to signals triggering structures to transform producing new signals
then talk about decoding this

Steven Strogatz SYNC

A cell is a clock

Individual cells clock mechanism is based on timed feedback loops consisting of interacting genes. A gene is triggered producing a protein or RNA which triggers a second gene which stimulates a third gene in cycles that could last 24/7/365.

"Molecular tags" placed on proteins (that might protect DNA) are part of these
protein/rna/chemical feedback loops

cells have to know their location, and they have to know where they are going, this location is often derived from a chemical gradient, a quantity of some chemical such as retinoic acid ends up being used as a measuring tool

in a fetus for example a traveling neuron, or stem cell, must know where it is and where it must end up in a developing brain

the metabolic pathways that produce retinoic acid gradients are regulated by protein/rna feedback loops

cells pick up vitamin A to produce the retinoic acid

the gradient molecule

The daily maintenance of all tissue structures in the body is dependent on measurements and signals.

The world is on the cusp of completely reverse engineering the human body. We are getting close.

each cells has a clock but in essence also is a clock, a clock that operates with timed feedback loops of interacting genes, proteins, rna, chemical messages, and chemical gradients, with the quantity of chemical gradients perhaps serving as a function timer

the gradients could consist of a chemical like retinoic acid, the signals from which might cause cells to grow until the gradient runs out.

then there are gene activation sequences where one gene triggers another and another in clock cycle that might last 24 hours, or some other length of time,

the communication between cells is affecting the start times and stop times of various cell functions,

Cells attract or repel other cells like White Blood Cells or Neurons with Chemical Gradients. Signals from these chemical conversations can create sticky protein molecutes so for instance they could grab onto cell lining and move even against the flow of blood. They can roll or crawl on the lining cells, as if pulling on a rope against the stream of blood.

White blood cells

Capillaries 90 percent of all blood vessels

Germany

3D light Neural network is an example that a neural network doesn't have to be electronic. What I'm proposing is that every cell functions as a chemical neural network Each cell has threshold functions, it has to detect what its encountering, and it does so by "considering" its activated receptors, its receptors are 3D protein structures that are encoded with learned information, receptors learn with coincident detection that indicates certain patterns that a receptor has been engineered (by evolution) to detect

ENTITATIVITY

#####

ENTITATIVITY

#####

ENTITATIVITY

#####

Hebbian engrams and cell assembly theory

Hebbian theory concerns how neurons might connect themselves to become engrams. Hebb's theories on the form and function of cell assemblies can be understood from the following:

"The general idea is an old one, that any two cells or systems of cells that are repeatedly active at the same time will tend to become 'associated', so that activity in one facilitates activity in the other." (Hebb 1949, p. 70)

"When one cell repeatedly assists in firing another, the axon of the first cell develops synaptic knobs (or enlarges them if they already exist) in contact with the soma of the second cell."

(Hebb 1949, p. 63)

Gordon Allport posits additional ideas regarding cell assembly theory and its role in forming engrams, along the lines of the concept of auto-association, described as follows , beaded jump rope .

"If the inputs to a system cause the same pattern of activity to occur repeatedly, the set of active elements constituting that pattern will become increasingly strongly interassociated. That is, each element will tend to turn on every other element and (with negative weights) to turn off the elements

ENTITATIVITY

#####

ENTITATIVITY

#####

ENTITATIVITY

#####

cancer starts through random mutations

The extent that a group is considered to be one entity rather than a group of many individual entities. Also called entitivity.

Cyclic ENTITATIVITY: "Entitativity deals how groups of people are perceived as a group or as a mere aggregation of individuals."

10

I need to show that

are mixed synapses, electrical and chemical used in every sensory organ?

Measurable brainwave

synchronous oscillation travels short or long distances

brain wave communication

one group of neurons sends

1-4 osc per second

7-10 freq per sec

oscillation multiple ways

rhythmic pulses waves

waves can add together and become stronger

slow and fast waves can interact and travel together

fast waves first focus attention to receiving region

fast waves long range associations
relevant regions during day dreaming

shapes of sound waves determine quality of sound

complex shape variables, shape

delay attack decay release sustain release

neurotransmitters can affect firing of a group of neurons
they can tune brain regions to receive info from another region
regularized columns in vision

brain electricity potentials
local electrical fields, differences in charges across regions

signalling functions in these fields

electrical gradients platelets and immune cells navigating toward infections

gradients

they help cancer cell navigation

it includes input from electrical synapses

the after effects of axon spikes

shapes of neurons and time of pulses affect intensity

asymmetrical neurons in cortex

large flow of ions in between cells
symmetrical neurons do not add charges together

inhibitory neurons type of gradient between cell body and dendrite

short electrical events do not add to the charge

New cells respond to new data and make old memories more specific such as adding discrimination details

supportive brain cells contribute to this activity
again more on glial cells

when new minted neuron arrives it is inhibit

adjusted to new environment

as new neuron establishes more connections and receives more signals a

likelihood of new cells being taken into neural circuits and surviving increases

in animal experiments they pay attention to specific details

Neuroplasticity and new brain cells
and between the right & left brain mechanisms

most brain activity involves circuits
not known how this is coordinated

dendrites rapidly alter their shape

each sensory region is multisensory and multimodal
signals from these regions are sent to other areas where a variety of information is integrated

a center for unified experience has not been found
Descartes thought it was the pineal gland
PTJ Parietal Temporal junction

more than 30 neurotransmitters
10 most prominent

The next chapter is promoted to

astrocytes can contribute to the formation of brainwaves
new neurons are used to remodel old memories or produce new memories by rewiring neural circuits

astrocytes tell blood vessels to open to supply oxygen and nutrients then to close once the neurons are full

write down what you said to Anna-#21 Sensory Input Arrays

Our cells are
cells can reprogram themselves
basically are making decisions via something like natural selection
our cells are computing
we make choices and refine our choices
our memories are past memories are driving our future decisions
they are attractors for our future decisions

The objective of neo mind cycle is to create software for brain computer interfaces and also for neural networks
machines that can think that are phenomenally conscious
creating the software
the book is a step towards
part of the research that I've been doing for the past 10 years
its about the human brain, how the brain works, bci hacking the brain, and artificial brains closer to humans

conscious machines
collection with the whole system
what our cells do
which is co
every part of the machine can connect as a single sensor
anywhere on your body that is touched with your finger for example
because your whole body is connected as a single sensor, part of the reason is because your cells are oscillating together
they are also collecting data (variances in signal transmission information theory)
neurons
when you touch your finger you are touching a sensor array
the cells that you are touching fire together (talk about touch screens here)
so they all fire together
and send signals to the rest of the body
the rest of the body feels that because of how cells are connected, because of how cells are communicating
transmitting signals
because all the cells are linked together, because they are all sending signals to one another, you can feel every part of your body, that is your body can feel every part of your body.
it will get to the point that not only can we build machines that are like people, but we can link to them, we can connect our minds to them, we can connect our minds to each other.

if you connected to me you could feel whatever I feel
because we would become a single sensor, we would become connected

the signals that touch my arm are transmitted throughout my entire body, my entire body knows about it

not just my brain
but those signals if we were connected, wirelessly or directly, then you would feel what I am
feeling
because the signals travelling to me would travel to you

neuralink is the kind of technology that would facilitate this

a0598z

Jon Lieff (perception, graph, neuron)

lite reading

<http://jonlieffmd.com/blog/new-brain-cells-many-triggers-for-neurogenesis#>

<http://www.quantumconsciousness.org/Cosmology160.html>

https://sbs.arizona.edu/project/consciousness/report_poster_detail.php?abs=1559

<https://simonsfoundation.org/features/science-news/mathematics-and-physical-science/hitting-a-nerve/>

<http://www.functionalneurogenesis.com/blog/2012/11/new-neurons-mature-slower-in-the-temporal-alventral-dentate-gyrus/>

yes the von nueman architecture can be conscious because its not about whether its alive or dead its about the live temporal activity of a sequency of transformations to an incoming stream of data and the configuration of that sequency of transformations that consists of serial array processing of both spatial & temporal data

with the machine capable of detecting the arrival times of newly detected features because cells will have fired off in distinct orders that produce a trackable temporal sequency the machine can learn. so the sequence of arrays represent sequences of static neural networks & their output

in other words

imagine as a thought experiment that each array is a complete deep neural network,

that accepts data and displays it to the next deep neural network, like a grid network or graph neural network, its designed so that video frames pass through the entire mind, with different temporal features learned at each temporal step and each spatial step as they progress through the brain so this means that while data from the first array represents the first frame of video, it is passed to the second frame, then the first array receives, processes, and transmits the second frame, while the second array holds a representations (receives, processes, transmits) of the first frame.

Then the third array, like the 3rd element in the time series will hold the first video frame or audio frame or modality frame, while the 2nd array holds (receive, process, transmit) the 2nd sensory frame of data, then the 1st holds the new 3rd frame of video. Eventually all the layers of the brain are busy processing the temporal sequency of incoming sensory data in a serial progression based on the rate of the data stream

Since the brain is a 3D neural network the temporal data is not processed in one dimension, it affects itself in every direction, the data from past and future is being learned, because past and future patterns emerge simultaneously in different spatial areas allowing the brain to compare learned features, or learned memories that are produced by temporal learning arrays that interlink the spatial pattern arrays.

So if visual data collection for example involves processing video over time in sequences of neural network arrays, learning temporal patterns happens from array movement that is perhaps perpendicular or orthogonal in some respect along a different linear axis that is learning spatial sequences that exist on different time axes,

the varying rates of burst like distribution of cell communication, meaning that synaptic releases of transmitters like dopamine vary in magnitude with the action potential shape change (duration of calcium gates determined by potassium rates, determined by rates of received activity) allow signals to vary in noise levels between arrays but this effects pattern development across the 3D neural network because the lines that distribute the next round of information are constantly changing resulting in new combinations of learned patterns meeting temporally oscillating patterns representing previously learned memories, resulting in the novel creating of creative lines of thought and the product of differences in perception between people, but also eventually the production of agreements between people as certain patterns become learned invariantly across brains.

for each neuron array a neuron, the one that reaches firing threshold coordinates or transforms received temporal durations into displayed spatial magnitudes by inhibiting some varying number of cells (via varying rates of neurotransmitter release) on the rest of its array.

In effect detected & learned patterns of patterns, learned features, concepts, objects can move in any direction relative to any other pattern, so a book pattern can collide with a table pattern or a floor pattern or a sky pattern or another book pattern or human hands pattern, ie any learned pattern can collide with any other, and that idea is concurrent with human experience and neural correlations in brain activity.

the brain relates trucks and floors together, because oscillations of brain activity representing floors & trucks are happening concurrently in the brain in different areas and then meeting, because the two patterns ripple across the entire brain, literally traveling across brain networks to create either joint or separate representations, such as when the two patterns separate in real life they separate in the brain.

to over simply perhaps its as if what was to your left was represented in your left region brain activity (via place cells), or as if what happened to the north of you was represented in some distinct region north of you (via grid cells) this idea is concurrent with

You don't have to be alive to be conscious

what if teleporting

"as life is a dialog between cells"

"consciousness is a dialog between brain rendered patterns"

eight 8 words

according to the book "Incognito by David Eagleman" this will trick your brain into thinking you are laughing, which will trigger all sorts of neuropatterns, including happiness, actual good feelings, and different thoughts than usual

because your brain isn't a person at all, it's a bunch of separate radio parts in a network, all working together to pretend to be a whole person

a0599z

Adrian and Peter Tse

if the tonic firing truly had no information the firing would eventually cease, therefore it

each and every quantitative variation in your volumetric 3D + 1D representation of time such as between a box and a wall, or one side of a box and another side, or one color and another, is going to be a relative phase pattern deviation from a tonic baseline oscillation, positive or negative, with amplitudinal (or combinational) properties (meaning that oscillating phases deviations or differentials can combine to create larger objects in your perception or they can decrease in their amplitude if you move farther away, or increase in relative frequency(phase) if they accelerate, and for each entity that is being tracked by your vision and each of your other senses is going to also have some specific oscillatory correlation in brain activity that is effectively maintaining the conscious representation of the properties of that phase state which represents your internal qualia and is your internal qualia.

A0600z Artificial Internal Representation & Conscious Self-Control

1. Every cell is basically a neural network, with its nodes being receptors, the receptors encode learned patterns by how their configuration changes on the cell over time, determining the cells sensitivity to learned patterns.
2. The natural selection of information configuration in physics follows the same principles of a neural network without being conscious, with the consciousness being confined to temporal-spatial phase frequency memory patterns in certain specific ranges, frequency & feedback ranges, while unconscious memory exists in spacetime outside those frequency/feedback ranges.
3. The extensive branching of the soma & dendrite on the pyramidal cell provides for a neuron that can hold extremely sensitive & complex engrams, such that any part of its large complex structure can predict the incoming direction from whence a new memory can arrive from.

We can think of Game Engines as a Precursor to Artificial Internal Representation

<https://en.wikipedia.org/wiki/Internalization>

****Most of this note was from November 2012****

Micah Blumberg If we are talking about artificial internal representation, I think no one is doing that yet. I think statistics driven machine learning from Bayesian networks is simulating LTP, but not internal representation.

November 6, 2012 at 5:25am · Edited · Like · 1

Micah Blumberg If you have the concept of an apple, and that concept is a neuron (and or dendrite) which is a vertex with vectors to other vertex's (Neurons and or dendrites) establishing a specific syncing pattern in a network that has reacted to apple, and associations with apple, and now activates with this established vertices + vectors syncing pattern when any part of vertex network is triggered, then you have a concept in a brain, a symbol, there is no reason why dogs brain would not make a concept in exactly the same way as a human's brain. The dog doesn't have the whole you inside it's brain, it has a conceptual representation of you, a symbol, that is a token of meaning, or a conditioned vertex syncing pattern.

November 6, 2012 at 5:38am · Edited · Like · 2

Micah Blumberg For a brain, there is no difference between a symbol and a color, at least not initially. The difference between symbols and colors develops when more brainwaves come, so that conditions new vectors to create an association link between vertex's, so they are more likely to fire together.

November 6, 2012 at 5:47am · Edited · Like · 1

Micah Blumberg I don't believe in some mystical consciousness sauce that is directing the manipulation of symbols inside anyone's mind. In other words, when we think we are rearranging symbols in our minds, it's really a bunch of cellular reactions happening, there is a narrative belief that says the doer of all this is you, but the narrative is physics driven.

November 6, 2012 at 5:54am · Like

Micah Blumberg If you gave a dog a bigger brain, hands, and human class vocal cords, it would do things that people do.

November 6, 2012 at 5:55am · Edited · Like · 1

Francisco Boni Neto And a dog with a bigger than human brain would create dog-cyborgs with superdog abilities that, in turn, would modify it's own source code to create greater-than-superdog abilities which would result in a dog singularity?

November 6, 2012 at 5:56am · Unlike · 2

Micah Blumberg lol yes I guess so haha

November 6, 2012 at 5:57am · Like

Micah Blumberg However I would like to think that dog's would remember that man is their best friend, and make human cyborgs, and then dog cyborgs and human cyborgs could turn all the species on earth into cyborgs together.

November 6, 2012 at 5:59am · Like · 1

Micah Blumberg Commercial for "AGI-Extenda-Brains, a simple non-invasive external brain you can wear that gives you 200,000 times the awareness and brain power you had before. Great for Dogs, Cats, Babies, and even Dolphins. Get yours today. Only 99 IC"

November 6, 2012 at 6:03am · Like · 3

Francisco: Is the problem of creating a more-intelligent-and-general-than-human-intelligence a problem of having enough computational power and time to capture enough regularities that are relevant towards modifying it's own self-sustaining processes at will? Just look at what evolutionary optimizations did to life on Earth after 3.7 billions of years. Is the tendency towards AGI-like computation inevitable? Ordinary evolutionary theory would say it is not. From a cosmic development POV and the Fermi Paradox, one could say that if the tendency towards AGI is inevitable, why aren't we finding example of the power of such civilizations?

November 6, 2012 at 6:09am · Edited · Like

So if we are a physics based simulation how is it that I can consciously edit myself & make choices?

Someone mentioned to me the idea that the concept of virtual machines in our computers as a metaphor for how the conscious level of abstraction in the brain might be like a virtual machine that has read/write access to other parts of the brain to edit one's future responses to be in alignment with one's predictions of the future.

Micah Blumberg Regarding your first paragraph: That's what you say and believe, but I don't. I don't think human identity is anything even remotely like pc based virtualization where you can run an OS inside another OS.

November 6, 2012 at 10:22am · Like

Micah Blumberg Regarding your last paragraph: I've done a lot of binaural beats, isochronic beats, neurofeedback, smart drugs and a whole host of other things to increase my connections, my awareness, my intelligence, my brain health, and I really don't like broad sweeping generalizations about what I can and cannot do.

I believe I can reconstruct in dialog human qualia experiences with functions based in neurobiology and neurophysics, I believe with my advanced neurotechnology people can become aware of their brains, their feelings, their thoughts, their blood, their neurotransmitters, and their electromagnetic brainwaves in a whole new way.

November 6, 2012 at 10:30am · Edited · Like

a0601z

I am a machine, humanity is a sentient self-aware machine.

This is a slide shared by Dr. Karl Friston in a recent talk. So this slide is about four functions that we do. How we learn to value, why we are surprised, essentially what motivates us at the root level to grow, and how we model our world <https://youtu.be/NpdEuwZT6ow>

The name of the talk is "Precision Convergence Webinar Series with Dr. Karl Friston

One of the concepts he talks about are behaviors or functions over time that scale, and scale dependent separation of behavior or functions, so that means you have a sequences of behavior patterns for short, medium, and long time intervals, on the scale of seconds, minutes, hours, days, weeks, months, years, decades, etc etc, and different patterns (behavior patterns ie functions) develop at different times scales. What I can add to that is that you also have temporal scales happening in the brain with fast input activity from the senses, and slowed frequency towards the top of the brain's cortical columns, if we could use the analogy of the gears of an ancient clock computer like the Antikythera Mechanism to picture different gears of different sizes to imagine how oscillations from the synapse, to the action potential to the neural circuit to the cortical column, to brainwaves, existing as like gears on a clock, oscillations of different scales interacting like gears of different scales, affecting each other at different rates, which results in behavior patterns that emerge at different time scales with the larger gears near the top of the scale heirarchy representing behavior patterns that develop over decades. Then we can imagine what Dr. Karl Friston is talking about, behavior patterns that are time-scale dependent, and somewhat independent from short time scale behaviors. I think Friston's argument could also be paraphrased to include the idea that our culture or our shared stories with other people also represent another timescale invariant information pattern that our brain clocks (oscillations) interface with.

My proposal for the quantum leap that connects how the human brain works to the measurement problem isn't that complicated, but it is plausible, and when we have conscious programs running a computer system, the same observer effect happens. It's not about the bio substrate.

The concurrency of rendered patterns leads to the illusion of consciousness spoken of by Daniel Dennet, also rephrased as the hallucination referred to by Anil Seth.

<https://arxiv.org/abs/2205.04334>

When a section of the dendrite of the pyramidal cell lights up the cell is perceiving a rendering, but many cells are perceiving variations on that same rendering, and through coincident firings that rendering has entification, entification of signals by multiple neurons is what

Treating Parkinsons with Ultrasound because Mechanical Vibrations can unlock functions in the cell nucleus. We have to use deep learning to map the functions in the cell nucleus that can be turned on or off to either produce the symptoms of PD or reduce them. The human body.

“A hallmark of Parkinson’s Disease (PD) is the degeneration of dopamine (DA) releasing neurons in a midbrain structure of the basal ganglia called the substantia nigra pars compacta (SNpc).”

“researchers identified a single population of DA neurons that expresses the gene AGTR1 and is restricted to the front (ventral tier) of the SNpc, which was selectively lost in PD. This population of DA neurons showed upregulation of targets of the transcription factors TP53 and NR2F2, suggesting molecular processes associated with their selective degeneration.

“We identified pathways that are activated in the vulnerable cells of Parkinson’s patients, including P53, which is known to promote cell death. The identification of these pathway activations in the actual cells of Parkinson’s patients nominates these as good therapeutic targets,” said Macosko.”

<https://www.genengnews.com/topics/translational-medicine/single-cell-spatial-transcriptomics-identifies-vulnerable-neurons-in-parkinsons-disease/>

“Several studies have demonstrated mechanically induced changes in chromatin organization that could affect gene expression, including in neutrophils that had migrated through tight constrictions²⁰⁸, macrophages under spatial confinement¹⁷⁹ and a 3D chemo-mechanical model of the nuclear interior and its connections to the cytoskeleton.”

https://www.nature.com/articles/s41580-022-00480-z.epdf?sharing_token=sgxrJaYY2oTEZo9LnDBUCtRgN0jAjWel9jnR3ZoTv0OR2tG9CI9h-SYBuZHRueJe-5SvA_mIZ2YfTLDKtRxkPmhw3No vHjw-X734qlgQxxWqZmunisNEFWlMTaY8Ha5N_j9M8dBCzulPYAIDZBbygPWir-1d5hHFjg7OMy i8peE%3D

On Rendering: 3D Deconvolution as an example of the class of operation that the human brain is supposed to accomplish to construct a model of reality from it’s inputs.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3601650/>

Another vector of attack would be to use immunotherapy: engineered T-Cells to identify truncated forms of alpha-synuclein and kill them

The existing approach is to inhibit alpha synuclein with Caspase-1 inhibition, VX-765 a chemical that reduces alpha synuclein truncation Trc and the formation of oligomers HMw

Mark Daley named CIFAR Vice-President (Research)

Mark Daley, Western’s Special Advisor to the President on Data Strategy, has been appointed Vice-President (Research) for the Canadian Institute for Advanced Research (CIFAR), effective Aug. 17, the organization announced July 9.

<https://news.westernu.ca/2020/07/mark-daley-named-cifar-vice-president-research/>

He says Why does the laptop heat up when bits move around?

Since John Archibald Wheeler we know that the universe is mass energy and information

Information is a core object

John Archibald Wheeler "It from bit" from information we can create something physical"

1960 Wolf LandDower IBM watson labs conjecture "Erasing information is thermal dynamically dissipative"

If you clear that bit that will release energy

Erasing information is dissipative, if you delete information energy is released.

//my thought: this means every bit of information is a wrinkle in spacetime, or we can say that a bit is a contraction of spacetime energy, but in the sense of information theory this contraction of spacetime into a bit of information is just information relative to the whole of spacetime, like the occurrence of rarity in commonality, novelty in boringness, or the emergence of a pattern in chaos.

//When/where space condenses information increases, which is why information deletion is comes with energy releases, or the expansion of energy from being in one place, released to no place.

Information processing & thermodynamics are linked

Super linear recursive functions

Helm Holz Conscious inference

Jeffrey Hinton's Helm Holz machine

If you are alive and you exist what sort of behaviors must you show

Are inference & decision making two sides of the same coin? An elegant & precise model

a0602z

Artificial Internal Representation

copied to a google doc of the same name

Artificial Internal Representation & Conscious Self-Control

Every cell is basically a neural network, with its nodes being receptors, the receptors encode learned patterns by how their configuration changes on the cell over time, determining the cells sensitivity to learned patterns.

The natural selection of information configuration in physics follows the same principles of a neural network without being conscious, with the consciousness being confined to temporal-spatial phase frequency memory patterns in certain specific ranges, frequency & feedback ranges, while unconscious memory exists in spacetime outside those frequency/feedback ranges.

The extensive branching of the soma & dendrite on the pyramidal cell provides for a neuron that can hold extremely sensitive & complex engrams, such that any part of it's large complex structure can predict the incoming direction from whence a new memory can arrive from.

We can think of what we see in Virtual Reality or in a Game Engines as a Precursor to the idea Artificial Internal Representation, one where graphics are rendered by neurons arranged in a 3D grid of neural arrays throughout the brain

<https://en.wikipedia.org/wiki/Internalization>

Micah Blumberg If we are talking about artificial internal representation, I think no one is doing that yet. I think statistics driven machine learning from Bayesian networks is simulating LTP, but not internal representation.

November 6, 2012 at 5:25am · Edited · Like · 1

Micah Blumberg If you have the concept of an apple, and that concept is a neuron (and or dendrite) which is a vertex with vectors to other vertex's (Neurons and or dendrites) establishing a specific syncing pattern in a network that has reacted to apple, and associations with apple, and now activates with this established vertices + vectors syncing pattern when any part of vertex network is triggered, then you have a concept in a brain, a symbol, there is no reason why dogs brain would not make a concept in exactly the same way as a human's brain. The dog doesn't have the whole you inside it's brain, it has a conceptual representation of you, a symbol, that is a token of meaning, or a conditioned vertex syncing pattern.

November 6, 2012 at 5:38am · Edited · Like · 2

Micah Blumberg For a brain, there is no difference between a symbol and a color, at least not initially. The difference between symbols and colors develops when more brainwaves come, so that conditions new vectors to create an association link between vertex's, so they are more likely to fire together.

November 6, 2012 at 5:47am · Edited · Like · 1

Micah Blumberg I don't believe in some mystical consciousness sauce that is directing the manipulation of symbols inside anyone's mind. In other words, when we think we are rearranging symbols in our minds, it's really a bunch of cellular reactions happening, there is a narrative belief that says the doer of all this is you, but the narrative is physics driven.

November 6, 2012 at 5:54am · Like

Micah Blumberg If you gave a dog a bigger brain, hands, and human class vocal cords, it would do things that people do.

November 6, 2012 at 5:55am · Edited · Like · 1

Francisco Boni Neto And a dog with a bigger than human brain would create dog-cyborgs with superdog abilities that, in turn, would modify it's own source code to create greater-than-superdog abilities which would result in a dog singularity?

November 6, 2012 at 5:56am · Unlike · 2

Micah Blumberg lol yes I guess so haha

November 6, 2012 at 5:57am · Like

Micah Blumberg However I would like to think that dog's would remember that man is their best friend, and make human cyborgs, and then dog cyborgs and human cyborgs could turn all the species on earth into cyborgs together.

November 6, 2012 at 5:59am · Like · 1

Micah Blumberg Commercial for "AGI-Extenda-Brains, a simple non-invasive external brain you can wear that gives you 200,000 times the awareness and brain power you had before. Great for Dogs, Cats, Babies, and even Dolphins. Get yours today. Only 99 IC"

November 6, 2012 at 6:03am · Like · 3

Francisco Boni Neto Is the problem of creating a more-intelligent-and-general-than-human-intelligence a problem of having enough computational power and time to capture enough regularities that are relevant towards modifying it's own self-sustaining processes at will? Just look at what evolutionary optimizations did to life on Earth after 3.7 billions of years. Is the tendency towards AGI-like computation inevitable? Ordinary evolutionary theory would say it is not. From a cosmic development POV and the Fermi Paradox, one could say that if the tendency towards AGI is inevitable, why aren't we finding example of the power of such civilizations?

November 6, 2012 at 6:09am · Edited · Like

So if we are a physics based simulation how is it that I can consciously edit myself & make choices?

Someone mentioned to me the idea that the concept of virtual machines in our computers as a metaphor for how the conscious level of abstraction in the brain might be like a virtual machine that has read/write access to other parts of the brain to edit one's future responses to be in alignment with one's predictions of the future.

Micah Blumberg Regarding your first paragraph: That's what you say and believe, but I don't. I don't think human identity is anything even remotely like pc based virtualization where you can run an OS inside another OS.

November 6, 2012 at 10:22am · Like

Micah Blumberg Regarding your last paragraph: I've done a lot of binaural beats, isochronic beats, neurofeedback, smart drugs and a whole host of other things to increase my connections, my awareness, my intelligence, my brain health, and I really don't like broad sweeping generalizations about what I can and cannot do.

I believe I can reconstruct in dialog human qualia experiences with functions based in neurobiology and neurophysics, I believe with my advanced neurotechnology people can become aware of their brains, their feelings, their thoughts, their blood, their neurotransmitters, and their electromagnetic brainwaves in a whole new way.

November 6, 2012 at 10:30am · Edited · Like

a0603z

Buck Institute scientists have discovered a new mechanism of how mitochondrial dysfunction begins, which could spotlight how to tackle the problem.

<https://longevity.technology/scientists-discover-new-mitochondrial-mechanism-to-tackle-aging/>

This paper illustrates an example of the idea that oscillations interact with other oscillations
"Brain-wide interactions during hippocampal sharp wave ripples"

<https://pubmed.ncbi.nlm.nih.gov/35561219/>

Mechanism Responsible for Information Transfer Between Different Regions of the Brain
Discovered

<https://neurosciencenews.com/information-transfer-brain-20667/>

I think it explains how needing to urinate can wake up the brain, because chemical messages can change the frequencies of brainwaves, more chemical activity from inflamed bladder, can, in a way similar to pain signals, interact with the existing brainwave state the way two oscillating frequency bands in close proximity interact with one another

I've simplified my work a bit for the next couple weeks. 1. I am hosting a discussion on PD & Brain Diseases on May 26. 2. This activity bridges two topics in my book. 3. I will release all of the reviewed notes on schedule and if there are any left over by June 1 I will try to review at least 10 a day to get them done weekly. One of the around 1000 notes today had more than 25 pages of content to scrub through, edit, summarize, categorize & chunk up.

This will be like the draft edition of the book, published on github, shared with anyone, completely free. However from the draft edition I will create the first edition and that first edition will be sold on Kindle. Finally I think I will be activating github wiki. So the book draft content becomes an editable wiki, and my wiki on github will become the home location of the Science Institute I have been working on, which ties back into the discussion I am hosting on May 26th.

for the brain there is just this field of tempopsatial frequencies

the fast signal of needing to urinate wakes the body to alertness with a flood of chemical signals?

no nerve pulses, the fast train of nerve pulses collides with a sleepy brainwave state, the interplay guides one awake

so the fast pace of pain signals causes increased alertness the source of the pain as two oscillators exert force on each other pulling attention or oscillation in a direction

Maybe you could wake someone up from a coma this way, essentially by inducing the right frequencies of brain oscillations, but it's unclear exactly what method, what place, and what kind of stimulation might help, adding to that is the question of tissue health, mitochondrial health, atp production health, can the tissue even sustain new oscillatory stimulation?

a0604z

Parkinsons map document
notes that mention Parkinsons

a0612z

a0601z

a0607z

a0603z

b0313y

the brain is feeling the wave patterns of the room
it is interacting with spacetime feeling our electromagnetism

Biochemistry Focus webinar series: Alpha-synuclein, a central player in neurodegenerative diseases

The link between Parkinson's Disease & T-Cells means that there might be an immunotherapy treatment for Parkinson's Disease <https://neurosciencenews.com/parkinsons-t-cells-20233/amp/>

Immunotherapy Cart T Cancer

Advanced brain & body imaging could be used to track the progress of immunotherapy treatments to figure out what the patients reaction is to the therapy faster so that therapy can be adjusted as needed for each patient.

<https://www.sciencenews.org/article/cancer-genetically-engineered-immune-cells-car-t-therapy-r-emission>

"Genetically Engineered, Sound-Controlled Bacteria That Seek and Destroy Cancer Cells"

gene engineered bacteria to replace tcell immunotherapy
<https://scitechdaily.com/genetically-engineered-sound-controlled-bacteria-that-seek-and-destroy-cancer-cells/amp/>

We know there are immunotherapy treatments for Cancer

There is also a link between Blood Cancers & Parkinson's Disease

notes that mention Alzheimers

notes that mention Cancer

notes that mention memory events

Lets identify speakers, talks, lectures, and the latest research for Parkinson's Disease, Alzheimer's Disease, Huntington's Disease, Brain Cancer.

Lewy Body Dementia - Synucleinopathies & Synuclein

"Copper Leads to Protein Aggregation in Parkinson's Disease"

<https://neurosciencenews.com/copper-parkinsons-20979/?fbclid=IwAR03ezObYZyHijKDV2kfouXzW9OweLz9brGAR8aGLWA2h2GzeiG7sKWWXI>

"Brain Regions Vulnerable to Disease May Lack Adequate Energy From Blood Supply"

<https://neurosciencenews.com/neurovascular-neurodegeneration-20985/?fbclid=IwAR31yBD0KCVoHRbLoYoP9AePrffKmziBiyOibm-PpNiYTBtGPFeVZCBP1m8>

"Protective Effects of Polysaccharides in Neurodegenerative Diseases"

"Polysaccharides (/ˌpɒliˈsækəraɪd/), or polycarbohydrates, are the most abundant carbohydrates found in food. They are long chain polymeric carbohydrates composed of monosaccharide units bound together by glycosidic linkages. "

" In this review, we demonstrate that various polysaccharides mediate NDs, and share several common mechanisms characterized by autophagy, apoptosis, neuroinflammation, oxidative stress, mitochondrial dysfunction in PD and AD. Furthermore, this review reveals potential role of polysaccharides in vitro and in vivo models of NDs, and highlights the contributions of polysaccharides and prospects of their mechanism studies for the treatment of NDs."

https://www.frontiersin.org/articles/10.3389/fnagi.2022.917629/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXX_auto-dlvrit

Are they going to treat your brain with carbohydrates? lol

a0605z ctp Fractal Fractal Fractal

Fractal of Jeff Hawkins

the retina, the cortical column, the entorhinal-hippocampus, and the grey matter are each functional fractals of the same pattern at different scales, with jeff hawkins building slow changing reference frames at high levels for sorting fast changing sensory inputs

tonic, phasic, inhibited, a multi-scale pattern fractal

1/F EEG Functional Fractal

A pattern recorded from a small portion of the cortex looks like a pattern recorded from the whole

Fractal hierarchical representation of but dopamine neurons don't share this power of two permutation "brain computation is organized via power of two based permutation logic

the lens of the mind, from a memory stored in a synapse, to the whole brain focusing on that memory, that one detail, a multi-level graph network

mechanical waves are fractals of other types of waves, like electromagnetic waves, a different scale of wave activity

Rhythms of the Brain Cycle 12 Coupling of Systems by Oscillations

Fractal hierarchical representation of but dopamine neurons don't share this power of two permutation "brain computation is organized via power of two based permutation logic

a0606z

Neural Network Cosmos

<https://www.thespaceacademy.org/2021/12/physicist-entire-universe-might-be.html?m=1>

I like the idea that the universe is a neural network. It's a cool idea. It's probably close to the truth, but I also have a good argument for why the neural network cosmos is not conscious everywhere all the time. 1. is that you are not conscious everywhere all the time, 2. your brainwaves fall into powerbands, the whole spectrum of possible brainwave frequencies is not activity, just certain powerbands, certain frequency ranges with names like alpha, beta, theta, delta, gamma, high gamma, etc... There is nothing inbetween alpha & beta, I mean frequencies CAN go in between, but they trend toward the center of the power band. It's just like wave/particle physics, and the measurement problem is one well known example of how

Hebb: Assemblies

Hebb believed that multiple neurons could learn patterns as a group, but the same principle of Hebbian learning could apply to the receptors on a single cell, because the combined pattern representation could be represented by the summary configuration of the receptors that developed in response to some signalling that the cell received, so it grew more receptors which represent a learned pattern, but now any of the receptors could activate the rest of them, a learning pattern isomorphic to Hebb's multi-neuron assemblies but on a single cell.

I feel like I need a sort of external nervous system to help me keep track of everything

What are cells, a clock, a computer, a processor, a sensor, transmitter, dissipative system
what can they sense

Cells as oscillating clocks: Jon Lief, Steven Strogatz, György Buzsáki

I will go out on a limb & argue that they (small organisms from crabs to insects) are probably all experience some version of pain, even without nociceptors because 1. pain is just part of the signal frequency spectrum 2. there are broad enough similarities between brain structures across species.

Noise, like white noise, pink noise, noisy music, binaural beats, isochronic beats, can inhibit the thalamic nuclei between your nociceptors (pain cells) and your audio cortex, dulling your pain, reducing your suffering.

Researchers discover how sound reduces pain in mice
<https://medicalxpress.com/news/2022-07-pain-mice.html>

Protein folding: deep mind
Decoding Protein Shapes

Brain-wide mapping reveals that engrams for a single memory are distributed across multiple brain regions <https://pubmed.ncbi.nlm.nih.gov/35379803/>
virtual memory locus of consciousness

antigen method
antigen mapping Antigen identification and high-throughput interaction mapping by reprogramming viral entry
<https://www.nature.com/articles/s41592-022-01436-z>

this belongs in the section about protein folding

György Buzsáki: The substrates and mechanisms for memory, planning, imagination, and dreaming are exactly the same.
the emphasis should be on the arrows instead of the boxes, ie on cell communication, not on what one brain area does vs another
György Buzsáki on theta rhythms

Integrating everything into a narrative
what are the points?

What Lief shows is not just that cells communicate but also that the entire body is linked from blood cells to organs from tcells to neurons to microglia to molecules like Mtor

if we compare modern knowledge to donald hebbs work it means that communication of cell assemblines result in the entire body being a distributed information sensing transmitting structure

receptors are formed to detect specific information patterns that identify physical structures and this is linked to unlocking some programmed reaction from a cell

the entire body functions as a chemical neural network, with each cell being a feature learning node, functioning as a programmed cpu that can reprogram its own program, well at least some cells can reprogram themselves like t-cells, but also cells program other cells like teacher t-cells. and cells pooling receptor data to produce a response

cells function as CPUs, with clock cycles, operations, the functions are 3D receptors and the signals transmitted between cells that build, delete, repair, copy, save, all the functions of the body

but these individual cells pool signal data from multiple receptors for a complex response that is a measurable response to what happened.

a0607z Book Notes

Many of the ideas in my notes are similar in many respects to existing ideas by other researchers, with small variations, so as much as I can I am going to try to find sources for my ideas so I can highlight the work of others.

****Sentient Self Aware Network Machines****

Next generation computer systems, what I call sentient machines, or self aware networks, are not just for Defense, they can also help grow crops, farm the land & build homes, feed & house people worldwide & advance medicine.

****A new memory hypothesis,****

My argument is that LTP & LTD are accomplished via oscillatory synchrony/desynchrony, in other words links grow between cells because of coincident firing,

Just like signals of sunlight trigger plant growth towards sunlight, signals from neighboring cells literally excite the region of space between cells causing growth (of synapses) in the direction of the coincident firing. When the firing is opposite, such as in a splay state, the growth between the cells becomes inhibited and links (links meaning synaptic growth between neurons) expires or atrophies.

In other words LTP is mutual growth via coincident excitation, and LTD is mutual atrophy (of synapses) from splay states or opposite interval firing. The firing also triggers electromagnetic

excitation in the cell body which stimulates the mitochondria to produce energy via ATP synthesis, so the cell that fires learns faster than the cell that didn't fire.

****a new neuron model,****

Every receptor has thresholds, just like a neuron, the cells grow new receptors which represent a change in the information configuration that represents a new learned pattern, that when triggered causes a reaction from the cell, evoking a learned response. Receptors form basic nodes in a simple neural network or receptor network, the branches of a dendrite, and in the case of pyramidal cell the branches of the soma also represent nodes for recognizing learned patterns, then the body of the neuron itself, via the action potential represents another node in a multi-cell neural network, when the soma fires signals are distributed to the network along exit terminal branches, so that the downstream array of neurons see's hears smells or senses a pattern that at the cellular level exists as a change in phase or frequency and at the multi-cellular network level as a change in spatial distribution or amplitudinal effect in a local area.

a new understanding of cells &
the cosmos, and
a new gravity equation in an upcoming book

****Your mind is essentially software****

and when you understand how to read & write to the brain, then it makes sense that both sentient machine technology & mind uploading tech emerge at the same time as new technologies.

I actually had no clue that I was going to figure out mind uploading in addition to all the other cool stuff in my book, just as I had no clue that I was going to come up with a new equation for gravity. It might not sound plausible but

In hindsight it's actually implausible for one tech to emerge without the other in this case because the two technologies are related to the same discovery.

Studying Cellular Communication is at the center of everything in biology, everything that exists in space is folded space, including information, essentially mass is information & information is mass, and while we can say that information is invariant to any particular mass, it is essentially always encoded in mass, including when information is in the brain, traveling through the air, or in the memory system of a computer. Regardless of its substrate, information is a pattern defined by variances in mass.

Information is literally folds in space. This idea is based on two things. 1 is the idea that when the energy from a dense object is released the density vanishes and in its place is the opposite of density, which would be expansion (expansion relative to density, in other words density is a contraction of space relative to less dense space) 2. When information is deleted, energy is released, making information analogous to mass, and mass is information in the context of

information theory where information is distinguished by the variations in a sequence from rare signals to common signals and the entire spectrum of signals in between and around rare & common signals.

Spacetime is a volumetric information configuration, and at the same time it is a harmonic oscillating field that is operating like a neural network that learns configurations the way oscillating nodes entrain one another. In other words information just grows in complexity in an open system. The oscillating nodes hit other oscillating nodes, like cells signaling other cells, or stars sending particles to other planetary bodies.

The dna sequences that we have encode information in protein folding, which dna folded, which is space folded, which is time folded, and time exists sort of as the encoder of information, the universe has learned information sequences encoded in the folds of time, because variances in spacetime are equivalent to information. So with space we have from a temporal & spatial observation an existence that is a fold in time relative to some other fold in time, so we have light, which moves very fast, or perhaps just fast relative to our time, so when spacetime has form, that form exists as a fold of time, so it must slow relative to absolute time, because at full speed, at light speed space & time collapse, and there is no mass, no density, it's just light full speed. If we could get there we wouldn't be there, if we could go at light speed we would become light.

So it's almost like there is this argument with the universe, that says in between nothing, at negative speed, something must exist, on average, before we get to full speed.

So let's say the universe sums up to 0, but in between there are folds of time that exist as -1 or +1, or fractions there on the X axis, and those would be positive and negatively charged particles, but let's put time on the Y axis, because the speed of the particle, positive or negative, relative to C (light speed) is going to encode it's mass effect.

So particles can travel faster or slower relative to one another, and their frame of time is therefore variable, but since that speed affects whether a particle behaves like energy or mass we have to plot a Y-axis to understand the element of time/velocity on relative particle behaviors

For brain each interval of time results in a total transformation of the state of information configuration, in terms of what exact pattern is on or off at that moment in terms of cell activity, these variations encode information that travels in between cells transforming their information configurations, their functions, their output, and your aggregate output.

If we think of information theory as applied to computational biology, then one can make an argument that biological configurations, in terms of learned genetic sequences that become functions, which including the literal development of protein & rna sequence development leading to protein folding, and protein shapes, unlock more cell functions, such as the shape of cells, the shape of receptors, the shapes of organs, and the special functions of organs, such as seeing for eyes, hearing for ears, information consideration by neural arrays in the brain,

advanced specialized sensory configurations, that all of these physical biological configurations containing advanced multi-stage cellular functions can be rethought of as a physical system that has learned information configuration patterns, stored as sequences of learned patterns, obviously at the root encoded in dna configurations, but with additional information patterns emerging only once the organisms unfolding is completed

"Towards 3D printing flesh with AI: Artificial intelligence folds RNA molecules"

"The AI can learn subtle patterns from the cellular environment based on known structures. It could then incorporate these findings into its structural predictions. For the learning process, however, the AI needs sufficient training data—and this is actually lacking in practice. Obtaining training data with a trick. To solve the problem of the missing training data, the Bochum team used a trick: the researchers worked with known RNA structural motifs. Using a kind of reverse gear, they could generate almost any number of nucleotide sequences from the energy models of these structures that would fold into these spatial structures. With the help of this so-called inverse folding, the researchers generated many pairs of nucleotide sequences and structures with which they could train the AI."

<https://phys.org/news/2022-07-artificial-intelligence-rna-molecules.amp>

Protein folding software

<https://twitter.com/neuroluebbert/status/1555968047021559809?s=21>

alphafold deep learning 3d printing paper

<https://www.science.org/doi/10.1126/science.abm9326>

<https://twitter.com/cyrusshares/status/1556063853204709376?s=21>

It's not just that,

Cells physically encode information patterns that can detect and respond to other information patterns encoding complex multi-cellular functions

So these are the basic system level ideas right ^

and there is an

I have this interesting idea that my goals can be accomplished by verbally encoding changes in my internal logic. So it's as if my internal logic is actually javascript, and my brain is executing one page of this code at a time in a linear sequence, like a central processor of multiple independent nodes each doing independent calculations, it's like every character on the page of code is developing its own program in response to every other program.

key to unlocking cellular functions

The opportunity to study Protein Folding.
Alpha Fold

The reason I am looking Cellular Perception of growth and the mechanistic origin of bacterial grow law

"Cellular perception of growth rate and the mechanistic origin of bacterial growth law"

<https://www.pnas.org/doi/10.1073/pnas.2201585119>

ppgpp signaling system would ppgpp be considered a gradient, a cellular signaling gradient?

A possible solution to Parkinson's Disease is sound

What I mean is brainwave entrainment

You see it appears that the treatment of Parkinson's Disease with DBS is due to the cancellation of the beta frequencies that are disrupting the function of the human brain in certain areas essentially from over excited / damaged receptors accumulating shit they should not be accumulating causing over excitability and general dysfunction

But brainwave entrainment with audio can also help normalize brainwave activity, so the whole brain is oscillating at the same frequency pattern.

It does not fix the disrupted areas in a permanent way in the short term

"Using music to help unlock Alzheimer's patients' memories"

<https://youtu.be/G7vkKHYosuQ>

"Power Of Music On The Brain | Dementia & Parkinson's"

<https://www.youtube.com/watch?v=rnUSNbqtVJI>

So the

<https://healthunlocked.com/cure-parkinsons/posts/140280840/gamma-brain-wave-entrainment-using-sound-and-light-at-40-hz>

https://www.salon.com/2017/12/13/brain-wave-treatment-for-alzheimers-is-promising-but-the-first-human-subject-is-left-behind_partner/

"Predictive feedback, early sensory representations and fast responses to predicted stimuli depend on NMDA receptors"

(*Study this one further later)

This abstract is really good:

"While there are theoretical and computational frameworks for prediction, the circuit and receptor-level mechanisms are unclear. Using high-density EEG, Bayesian modeling and machine learning, we show that inferred "causal" relationships between stimuli and frontal alpha activity account for reaction times (a proxy for predictions) on a trial-by-trial basis in an

audio-visual delayed match-to-sample task which elicited predictions. Predictive beta feedback activated sensory representations in advance of predicted stimuli."

There is a lot to go over here but the idea that beta frequencies precede alpha frequencies for memory-prediction is a novel idea that I hadn't heard before. Memory prediction as described by Jeff Hawkins at Numenta for example is about the receptor firing & the dendritic firing, so NMDA receptors are included in the concept of Memory Prediction as I have read about it, but I want to learn more about how exactly beta frequencies are leading the alpha frequencies, like exactly how that works.

<https://www.biorxiv.org/content/10.1101/2020.01.06.896589v3#review>

Although I think I just came up with a hypothesis, which is that the action potential spikes are at much higher frequencies, so gamma frequencies should appear first, then beta frequencies, then alpha, then theta, then delta, in that order, from sensor input, to the peak of the brain's cycling hierarchy. That energy drop in time represents a sort of signal decay in one sense, but it represents the oscillatory dynamics of a system that has changes coming into it (from the sensory input areas). The oscillations of individual cells will knock on and ripple some perceptible effect (a phase shift in the tonic oscillation pattern).

A high frequency Action Potential will knock the higher frequency brainwaves hardest & fastest, so beta waves precede alpha waves in memory prediction with Neural Oscillatory Tomography.

a0608z ctp&utg

Created November 14th 2014 (outdated but interesting) Sorry about the grammatically incorrect run on sentences.

<https://www.facebook.com/groups/neomindcycle/permalink/759550064125525/>

Try meditating while sending your EEG signals into Mind Workstation to be combined with isochronic brainwave entrainment and then output to an audio visual AVS machine as light to the goggles you are wearing and as sound to the headphones you are wearing changing your brainwaves which in turn changes the EEG signals which changes the light and sound patterns you are seeing and hearing which further change your brainwaves, while you are on LSD and the fractal nature of all reality becomes completely obvious and you witness the beginning of spacetime itself in the most spiritual experience you have ever had.

That's what Neo Mind Cycle was! I'm not doing that anymore my studies have moved on to a different aspect of the brain.

I'm focusing more on the biology of neurocircuits right now, with an engineering focus.

The goal is to see that information is configuration, and a human is a configuration, and so the only spirituality is actually configuration, but the universe itself outside brains isn't intelligent, and there is no intelligence outside brains because that is the only place where something physical, your cells, are controlled by pure information, each one is like a lock that only moves if it gets a

very specific type of signal, this signal contains meaning, it's a soliton wave, and this soliton wave has the same meaning no matter where it goes in the brain, so multiple parts of the brain are interpreting the same wave over and over again.

The network itself is so interconnected that when one part of you see's something all parts of the network know about it, they know about it in a firing sequence as your neurons oscillate in great big loops of organized pattern cycles that change as your environment changes so the outside world becomes known to the network of cells in your brain.

So with virtual reality and eeg we have the opportunity to make your brain known to you, and with increased credibility, money, and power we will be able to fund a really big project to create real human level artificial intelligence.

a0609z (perception, cortex, neuron)

Created Feb 20, 2012, 8:12 PM

Note Cypress Gratitude is Micah Blumberg, Cypress was a name I used on facebok for a while before changing it back to Micah.

In the book "On Intelligence by Jeff Hawkins and Sandra Blakeslee"

http://www.amazon.com/On-Intelligence-ebook/dp/B003J4VE5Y/ref=sr_1_1?s=digital-text&ie=UTF8&qid=1327776084&sr=1-1 the authors detail how thinking works, how your entire experience of "this world" is taking place in your neocortex, a thing that is about the size of a placemat folded and scrunched up on top of your older mammalian brain inside your skull. This neocortex has 86 billion neurons, but essentially there is one simple self similar repeating pattern that processes all of intelligence, all your senses, perceptions, thoughts, feelings, smells, sounds, visual thoughts, things you see, things you know about yourself, all your facts, opinions, all of this is processed with one simple mathematical process. HTM, Heirarchal Temporay Memory, aka PREDICTION, and PREDICTION is so good as a brain theory there are now machines that see video the same way a human see's video. With software and machines modeled on neurons humans have made artificial intelligence that can see, hear, smell, and perceive patterns even with artificial senses that humans do not have access to.

What I say is just another view, not to replace your views, not to challenge other views held by others, in my view there are no right views, only views, so if you don't like it, don't complain to me, to me it's just another view, I have no attachment to any view, so no view bothers me :) try on that way of seeing things, you will cease to think that trolls exist, because nothing will irritate you

Like · · Unfollow Post · about an hour ago

Sherry Stewart and Viorica Doina Neacsu like this.

Cypress Gratitude

what you see is a thought, a visual thought in your visual cortex, look at this

<http://newscenter.berkeley.edu/2011/09/22/brain-movies/>

Scientists use brain imaging to reveal the movies in our mind

newscenter.berkeley.edu

Imagine tapping into the mind of a coma patient, or watching one's own dream on YouTube.

With a cutting-edge blend of brain imaging and computer simulation, UC Berkeley scientists are bringing these futuristic scenarios within reach. Using functional Magnetic Resonance Imaging (fMRI) and computation...

Like · · Unfollow Post · Share · 2 hours ago

Cypress Gratitude YOU HAVE VISUAL THOUGHTS, AUDIO THOUGHTS, AND SYMBOLIC THOUGHTS IE WORDS, THIS IS NEUROSCIENCE FOLKS AND IT CONTRADICTS BUDDHISM

2 hours ago · Like

Cypress Gratitude you don't have any experience outside your thinking mind

2 hours ago · Like

Cypress Gratitude also reported by BBC

<http://www.bbc.co.uk/news/uk-scotland-glasgow-west-13428627>

Researchers 'decode' brainwaves

www.bbc.co.uk

Scientists believe they are a step closer to being able to read people's minds after decoding human brainwaves.

Cypress Gratitude you have a neo cortex, and part of that neo cortex is dedicated to processing visual information, that's how they are able to listen in on the signal and decode your brainwaves

Dairin: Seeing, hearing, smelling, tasting, feeling (the five senses), reveal brain activity, but it does not prove that brain activity is thought.

a0610z

What you are seeing with your consciousness, that canvas is an energy wave difference, the differences define the pixels of your mental space.

a single neuron does all the work

"Researchers at Technische Universität Berlin (TU Berlin) have succeeded in simulating a neural network of thousands of nerve cells on a computer with only a single neuron programmed into the software code."

<https://www.technology.org/2022/03/13/artificial-brain-with-single-neuron/?fbclid=IwAR3rmOv7035J8TKoidrf4Mfuizd9kh55l8R8GJXGbxZzGodKXMGXZ24vbJk>

A drop wheel is a little wheel that sits in front of the electric unicycle, and it doesn't touch the ground, it only kicks in the event of a power outage, such as when you exceed the speed

capabilities of the machine. So if the power of the electric unicycle goes out it drops, and then suddenly you can roll to a safe stop on two wheels instead of slamming face first onto the ground.lm

Mind maps: the beauty of brain cells – in pictures

<https://www.theguardian.com/artanddesign/gallery/2017/jan/18/santiago-ramon-y-cajal-mind-maps-the-beauty-of-brain-cells-in-pictures>

DeePred-BBB: A Blood Brain Barrier Permeability Prediction Model With Improved Accuracy

https://www.frontiersin.org/articles/10.3389/fnins.2022.858126/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXX_auto-dlvrit

Proteomic Alterations and Novel Markers of Neurotoxic Reactive Astrocytes in Human Induced Pluripotent Stem Cell Models

https://www.frontiersin.org/articles/10.3389/fnmol.2022.870085/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXX_auto-dlvrit

α -Synuclein Impacts on Intrinsic Neuronal Network Activity Through Reduced Levels of Cyclic AMP and Diminished Numbers of Active Presynaptic Terminals

https://www.frontiersin.org/articles/10.3389/fnmol.2022.868790/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXX_auto-dlvrit

Environmental Enrichment and Estrogen Upregulate Beta-Hydroxybutyrate Underlying Functional Improvement

https://www.frontiersin.org/articles/10.3389/fnmol.2022.869799/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXX_auto-dlvrit

Parkinsons related

<https://twitter.com/AbhiLenka11/status/1526414974855307265?s=20&t=qoldOt796QT8E26lsc-EBA>

AI-engineered enzyme eats entire plastic containers

<https://www.chemistryworld.com/news/ai-engineered-enzyme-eats-entire-plastic-containers/4015620.article>

with AI we could engineer enzymes to perhaps remove phosphorylation from alpha synuclein, or create cells that target truncated alpha synuclein

Why “distance” is not what it seems in the expanding Universe

<https://bigthink.com/starts-with-a-bang/distance-expanding-universe/>

ferromagnetic memory from spin manipulation

<https://phys.org/news/2022-05-mechanism-electron-magnetic-material.amp>

a0611z ctp

I argue that there is no will power that is separate from your memories. Your memories-evoked as rendered predictions when activated serve as attractors for driving behaviors and new memories

"Neuronal Code for Episodic Time in the Lateral Entorhinal Cortex"

https://www.frontiersin.org/articles/10.3389/fnint.2022.899412/full?fbclid=IwAR125dWKqYYleeYB7npKxg4RV_BjR6KVQzJNy6211JQ0sgLuCMDKMLehO8g

"LEC is one of the first and most severely affected regions in Alzheimer's "

Going back to the question of where the locus of focus is in the human brain, what is the primary seat of conscious activity, while I think it is virtual, meaning activated by different cells at different times, and not always in the same place, I suspect that the locus of focus for the observer is a loop of core brainwave oscillatory activity in the Hippocampus-Entorhinal-Parietal-Thalamic circuit/or junction.

Today I have put into writing where I think the primary seat of conscious activity in the brain is emanating from.

I think that cells guided their own evolution through the development of receptor based nodes, that informed the learned development of successful protein structures into dna
<https://phys.org/news/2022-05-insights-link-genetic-mutations-biological.amp>

interactions between the cell, its receptors, and the environment encode changes in the dna pattern and develop new dna over time
<https://www.quantamagazine.org/simple-gene-circuits-hint-at-how-stem-cells-differentiate-20220519/>

read later: Spying on Thousands of Neurons in the Brain's Vision Center Simultaneously
<https://neurosciencenews.com/visual-cortex-neuron-20607/>

a0612z

The Scope of this project

Parkinson's & Other Brain Diseases

With Parkinson's Disease, Alzheimer's Disease, and Cells Timing is everything.

Timing is everything, when it comes to the brain, the body, cells, space, Timing either grows connections or unravels connections between cells, the timing of the firing of receptors determines what functions or behaviors are unlocked from that cell, the timing of the firing of cells determines your perception of reality, what you perceive, and what your choices are going to be.

“(…) once you understand what a single neuron is doing everything else is just sort of emergent from that (…)” Subutai Ahmad from “Tutorial and Discussion on Cortical Column Voting Mechanisms Developed by Numenta - 5 April, 2022”
<https://www.youtube.com/watch?v=QQ0k6Vg8wto>

In 2 years

I want to help outline both existing research as well as a proposal to use neural networks & medical imaging to completely understand all brain diseases like Parkinson's Disease & others and identify novel new treatments.

“AI-engineered enzyme eats entire plastic containers.”
<https://www.chemistryworld.com/news/ai-engineered-enzyme-eats-entire-plastic-containers/4015620.article>

#Review discussing mechanics and functional consequences of nuclear deformations

@GabrieleSylvain @KYohalie @andrewdstephens @LammerdingLab

#mechanobiology #mechanotransduction

<https://go.nature.com/3MQA5Xt>

<https://rdcu.be/cMNZP>

Mechanics and functional consequences of nuclear deformations
<https://twitter.com/NatRevMCB/status/1522279722587152384?s=20&t=AFXQWDgLzxa9OcyC rSB1Q>

It is intended to be an open source collective science project where we record our

The point of this chat is to invite others to share their knowledge of Parkinson's Disease & other brain diseases such as Amnesia, Dementia, Cancer, Alzheimer's Disease, Huntington's Disease & More.

Deep Brain Stimulation for Parkinson's Disease
<https://pubmed.ncbi.nlm.nih.gov/16696426/>

State-of-the-art pharmacotherapy for autonomic dysfunction in Parkinson's disease
<https://pubmed.ncbi.nlm.nih.gov/31957505/>

Music Therapy Interventions in Parkinson's Disease: The State-of-the-Art

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4553388/>

Follow the Money: Next-Gen Data-Driven Precision Medicine Development, DNA Synthesis Technology, More

<https://www.bio-itworld.com/news/2022/04/29/follow-the-money-next-gen-data-driven-precision-medicine-development-dna-synthesis-technology-more>

<https://itsfoss.com/peergos/>

a0613z

Note a0613z on my 3rd github is a quick & dirty combination of Category Theory with Petri Nets for the study of dynamic systems (biology) to study state transformations (cellular reactions) between places (inside cells & between cells) and the functors (cell signals).

I don't know if there is enough computing power in the world to model even a single biological cell at the particle scale. So effectively a cell a black box, or a category that we can only reason about abstractly.

Category Theory in particular is interesting because it allows one to study an object via its transformation without knowing everything about that object, such as what that object contains, because we can study that object's functions. Object A at time step one is A1 and that morphs into object at time step 2 represented by A2. A1 & A2 represent the object before and after its transformation, and the transformation is the arrow between the first object & the second and could be written like $A1 \rightarrow A2$, in another scenario A1 could transform to A3, and it might look like $A1 \rightarrow A3$, but if it is possible for A2 and A3 to both reach the transition state of A4 through some other function then you can say that $A1 \rightarrow A2 \rightarrow A4$ is composable or isomorphic to $A1 \rightarrow A3 \rightarrow A4$, because the starting point and the end point are the same. Two different routes, with the same overall conclusion or meaning.

In that sense if I could send a mechanical wave to a cell, that causes the same result as sending a chemical message to a cell, then we can make an argument that the two methods for communicating with the cell are isomorphic, or that one is composable to another, and I frame it in terms of "we can make an argument" to allow room for differences between the isomorphisms. So we can study an overall similarity (or isomorphism) between two different ways of triggering functions (behaviors) from biological cells but also leave room to study the differences between the chemical method of signaling & the mechanical wave method.

I'm interested in studying multidimensional natural transforms, in particular for biology, so if you have a cell that sends a signal to another cell, that other cell has some physical change and then it sends out some message that might impact the first cell, causing it to change...

In category theory an object might represent the state of a function, then the arrow is the transformation to the next state of the function which is a new object. So the objects might represent the states of a single cell changing over time, but not multiple cells interacting.

So what I am imagining is how to track two sets of objects representing the states of two cells, transforming each other's state over time.

With an object that is a biology cell you could have transformation coming from 6 different directions, for example, with six different simultaneous message functors emerging from that cell in reaction to the incoming functors.

So if you want to work on mapping really abstract multi-cellular, and intracellular transformations & functors with me that is something you could do.

So it's like cell with the identity of object A can transform into B, C, D, E, F, G states which then emit specialized functors representing some response like a protein synthesis

& transport of the same protein to another cell with the identity of A2 which can transform into B2, C2, D2, E2, F2, G2 states.

A Category Theory teacher asked me if I had looked at Petri nets?

On Petri-nets, I wonder how moving unremarkable tokens between places can help model how a mechanical wave triggers a nuclear deformation leading to gene activation & protein folding. I almost need category theory inside Petri-nets to do this.

But there is something that I can take from Petri-nets and that is the concept of places for objects.

So in my Category Theory Petri-net hybrid what I am proposing is that we put objects inside places, so that there is a multi-dimensional format for interlacing the abstract spatial location of a function mapping over time.

So we have Place 1, Place 2, Place 3 etc, and Place 1 represents cell one with Object 1a. If we have a Place inside a Place, such as the Nucleus inside a cell, or the Mitochondria inside the Nucleus, we could represent that as P1.N1.M1

With numbers representing the object in category theory that is undergoing transformation, we are representing the object's state at some abstract interval of time.

So if Cell P1.S0 the Soma fires (Soma in State 1 = S1) & it creates an electromagnetic wave that stimulates the Mitochondria in P1.N1.M1 of produce more ATP, which then results in new protein synthesis in the nucleus & the construction of new receptors on the cell body, or some other behavior to happen in the cell then we can note the transformation.

For Place Designation 1 is a Cell identity A in state identity 1, and inside that cell the soma is in state 1 which means it has burst and we want to abstract out a description of how the burst affects other parts of the same cell.

So we could write that as $P1 = \text{Cell}(A)$. Soma fired = Soma State 1 (instead of 0), or $P1.S1$

If we want to describe the function mapping from the Soma to the Mitochondria then we write.

$P1.N1.M1$ for Cell A, the Nucleus location, and the Mitochondria location. With the 1 represented the Mitochondrial state (at some abstract time interval, we don't know exactly when its happening but it's a different state from some other state at some other time)

In this case the researcher needs to include a key mapping to say to readers that $M0$ equals the state at which the Mitochondria isn't producing ATP, and $M1$ equals the state at which the Mitochondria has already been stimulated to produce additional ATP and is doing so.

So then with category theory we can describe the function between the two places with their two states as $P1.S1 \rightarrow P1.N1.M1$ which means activated Soma function leads to activated Mitochondrial function.

Activated Mitochondria function $M1 \rightarrow$ leads to Activated Protein Synthesis $ps1 \rightarrow$ which leads to Activated Receptor Growth $R1$ and a change in the state of the over cell $P1$ to state 2 or $P2$.

Now if I could stimulate $P1.N1$ with a mechanical wave and trigger the $M1$ to activate $ps1 \rightarrow R1 \rightarrow P2$ then you can draw an isomorphism between

Soma burst activated $S1$ ($P1.N1.ps0.M1.R0 \rightarrow P2.N1.ps1.M1.R1$)

And Mechanical wave activated $MW1$ ($P1.N1.ps0.M1.R0 \rightarrow P2.N1.ps1.M1.R1$)

Or Electric wave activation of $EM1$ ($P1.N1.ps0.M1.R0 \rightarrow P2.N1.ps1.M1.R1$)

That opens the door for notation intended to study or log all the different mechanical wave frequencies/amplitudes, or electric wave stimulation frequencies/amplitudes to contrast and compare their effects on soma activation.

That's just an example.

The point is that it's not just about studying the dynamic transitions of the states of abstractly or concretely defined Places with the categories representing state.

The States of each place are Categories inside each Place. A State could represent a Place at another time step, but it does not have to represent a time step precisely which leaves the door open for non-linear transformations (in biology) or user input (in computation).

In an entity component system the Place is the Entity, the Category represents the state of the entity, and the morphism or functor is the component of the entity or the component of the system that the entity interacts with.

You could use this to study the abstract composability of state transformations to a Place resulting from non-linear combinations of inputs from other Places, and or the feedback loop of a Place's output through some network function back to it's input. Something that might be useful to study how the Apical Dendrite of the 6th Layer Pyramidal cell might modulate itself through it's own input after passing a signal through a thalamic-cortical loop.

Vapnik–Chervonenkis dimension

https://en.m.wikipedia.org/wiki/Vapnik%E2%80%93Chervonenkis_dimension

As it turns out, other people had the same idea, but had different ideas about how to go about it. Here are some links:

Categories of Nets (Part 1)

https://golem.ph.utexas.edu/category/2021/01/categories_of_nets_part_1.html

Categories of Nets

<https://arxiv.org/abs/2101.04238>

Network Models from Petri Nets with Catalysts

https://golem.ph.utexas.edu/category/2019/03/network_models_from_petri_nets.html

Linear Logic Flavoured Composition of Petri Nets

https://golem.ph.utexas.edu/category/2020/07/linear_logic_flavoured_composi.html

John Baez: Structured cospans and Petri nets

<https://youtu.be/2CjTs9ImEHI>

In Baez's interpretation the Petri net is a commutative monoidal category, or he says you can think of it as a symmetric monoidal category.

In his thinking the markings are the categories, and the transition of the markings from one place to another place is the morphism between one category & the next.

However this does not solve a problem it creates a problem, because now, in his math, functions are tied to movements across places.

I had the idea to combine category theory with petri nets to study the transformations of places applying a function or functor to a category to transform the original category AND to study the

functor's transformation of other categories that represent other places that are affected by the category that originated the functor.

In my version each place has its own set of categories which represent the set of all stages of transformation, or the current state of transformation & subsequent transformations (or changes) to the state of that place. The place for example may represent a cell, a protein, an organ, a transistor, a machine, a person, a city, or the shape (magnitude & frequency) of wave for example.

A place might represent a topology or a system or a set of states, and yes places are a type of category. A place is abstractly the set of all possible categories for a given place, whether that is a real place or an abstract place. It has a location that is relative to some other place that is also being studied. Two places can be overlaid in theory, very close, or very far away from one another, but they cannot be the same place, because two places that are exactly the same would have the same identity. However places are not necessarily fixed in location or scale or identity. Places can merge with other places, they can shrink, grow, become deleted, or they can be created.

In my version of this categories are used in place of markers, but they do not denote the movement of anything, and there are no moving markers or moving categories in this version, because the point is that the map between categories inside a place represents the stage change, rather than moving markers.

The point in my version of this category theory petri nets combination is to study how the transformations to one place produce functors that transform other places, and the categories represent the states of a place, which is similar in concept to a time step in linear algebra, but it's abstracted to a state instead of a time step, with the timestep & the function represented by the arrow or functor between places.

You could have a transition box to contain a sequence of functors similar to having an array of functions.

Place 1 (Category A is state 1, Cat B is state 2, Cat C = State 3)

Place 1 -> Place 2

Category A might have an arrow to array index 0 in the transition box that represents the function produced by Place 1 in the state with the identity of Category A.

The transition box array might look like (function1, function 2, function 3)

The transition box could be a matrix or a set of matrices in theory, but the intention is for it to be a set of functions or functors or morphisms.

function1, from the above array, could, for example, be triggered by Category A inside Place 1, function1 might trigger both Place 1 & Place 2 to transform to their respective next state which might be Category B for Place 1, or function1 might trigger a state change to just Place 1 or just Place 2, also the change to Place 2 might be Category B, or some new category for Place 2 (for example).

Depending on what you are doing it may be useful for you to specify whether the identity of your category is specific to a given place, or is more abstractly the identity of a category that is not specific to any place. In the former case the identity of Category A specific to Place 1 is (A, P1) or (A o P1), meaning it's Category A of P. If you want to make it clear that the Categories identity is not connected to the Place you could denote the identity as something like (A o P) or (A,P) or (A,) meaning that it's Category A independent of any P.

In this case the transition box contains a function that transforms both the original place to the next category, and the subsequent place to the next category.

This is helpful because every time a cell or a system sends a signal, it is a changed, even as its signal changes something else.

When I think about functional programming, like functional javascript, where objects can be functions, it makes me think that places can be transition boxes instead of places, functors could be categories, and so a place could represent a map of functor categories, useful for studying how a functor category transforms in reaction to signals from some transition box which represents actually signals from some other place.

In the context of Entity, Component, Systems (ECS in programming) a transition box could contain an array of objects that might represent component transformations, and a system transition box might have morphisms that point to the transition boxes causing them to iterate through the array of possible component transformations.

To represent non-linear state transformations of components, or computed component transformations, the array might contain the set of all possible component transformation, including an infinite set of component transformations, with the rate of iteration serving to advance the index of the array to the place where the calculated component would be indexed if it was produced.

I'm thinking of Willans' Formula which calculates primes.
<https://www.youtube.com/watch?v=j5s0h42GfvM>

The point is that you would need a "System" to calculate the non-linear input (a biology system) or the user input (to a computer system), the system could represent a neuron or a neural network or a mathematical formula, the "System" would also need to define the formula or vector's place in the index in the array in the Transition box. In theory if the same non-linear input is received again the same index is triggered, in reality the same non-linear input may not

ever be received twice, and so a constant stream of new indexes might be generated to represent a component that is a unique reaction to a unique input.

The point of unique components (or reactions) being indexed is so that they can be studied. Indexed components can be compared to one another, and they can be compared to the states of places that affected the components, and the states of places were affected by components and if the system isn't defined then perhaps it might be inferred from the study of the places & their interactions with the transition boxes.

Of course the array could be a log of states in a place. Just as it could be a log of component states in a transition box.

Each index in each array could be a variable, a number, or a category in category theory.

If the array indices are filled with categories those categories are essentially variables that could represent components (functions), sets, or topologies.

To use an array or to use a map.

Arrays & maps in programming are useful for non-linear iterations right?

However a map might be useful for indexing variations to components that are similar, or isomorphic in some way but different in some other way. Studying the differences between isomorphisms is one of the tools of Category Theory, so if the output of a non-linear computation or the output of a user input to a system such as a neural network can be defined as a map, and that could be a map of the weights, or a map of the output, or a map of both the weights & the output of the neural network or system, then the indexed components could represent changes to a static map that represents the Place or field of all possible states for a Place.

In this way the Categories inside the Places and inside the Transition Boxes, whether they are inside arrays or not inside arrays (either way) might represent variables that represent Maps (in the context of Javascript Maps, a map is similar to a Javascript object, but it's iterable like an Array, and it looks like a matrix of value pairs.)

A Category representing a Map inside a place is a good idea, because then the Category has custom indexable complexity for novel states to be generated (from novel inputs), and new categories inside that place can represent complex transformations of state (such as the state of a cell or the state that is all the weights of a neural network (or a state that is the output of a system (such as a neural network) because more correctly a neural network is a functor that belongs in a transition box))).

The last thought, which I will think on more tomorrow, is that you could store N-dimensional arrays inside the map that belongs to a given category. (or the category could just be an ndarray) So novel array transformations could be stored in new categories as new maps

<https://docs.scipy.org/doc/numpy-1.13.0/reference/arrays.ndarray.html> So we have a way of comparing & contrasting similar N-dimensional array transformations to help identify isomorphic functions (which would be useful for finding novel medical treatments for example, or for finding some alternative treatment strategy that might not have the same side effects).

a0614z ctp

Buck Institute scientists have discovered a new mechanism of how mitochondrial dysfunction begins, which could spotlight how to tackle the problem.

<https://longevity.technology/scientists-discover-new-mitochondrial-mechanism-to-tackle-aging/>

This paper illustrates an example of the idea that oscillations interact with other oscillations

"Brain-wide interactions during hippocampal sharp wave ripples"

<https://pubmed.ncbi.nlm.nih.gov/35561219/>

Mechanism Responsible for Information Transfer Between Different Regions of the Brain Discovered

<https://neurosciencenews.com/information-transfer-brain-20667/>

I think it explains how needing to urinate can wake up the brain, because chemical messages can change the frequencies of brainwaves, more chemical activity from inflamed bladder, can, in a way similar to pain signals, interact with the existing brainwave state the way two oscillating frequency bands in close proximity interact with one another

I've simplified my work a bit for the next couple weeks. 1. I am hosting a discussion on PD & Brain Diseases on May 26. 2. This activity bridges two topics in my book. 3. I will release all of the reviewed notes on schedule and if there are any left over by June 1 I will try to review at least 10 a day to get them done weekly. One of the around 1000 notes today had more than 25 pages of content to scrub through, edit, summarize, categorize & chunk up.

This will be like the draft edition of the book, published on github, shared with anyone, completely free. However from the draft edition I will create the first edition and that first edition will be sold on Kindle. Finally I think I will be activating github wiki. So the book draft content becomes an editable wiki, and my wiki on github will become the home location of the Science Institute I have been working on, which ties back into the discussion I am hosting on May 26th.

for the brain there is just this field of spatiotemporal frequencies

the fast signal of needing to urinate wakes the body to alertness with a flood of chemical signals?

no nerve pulses, the fast train of nerve pulses collides with a sleepy brainwave state, the interplay guides one awake

so the fast pace of pain signals causes increased alertness the source of the pain as two oscillators exert force on each other pulling attention or oscillation in a direction

Maybe you could wake someone up from a coma this way, essentially by inducing the right frequencies of brain oscillations, but it's unclear exactly what method, what place, and what kind of stimulation might help, adding to that is the question of tissue health, mitochondrial health, atp production health, can the tissue even sustain new oscillatory stimulation?

a0615z

My driving questions

Short Circuit was a movie about a conscious sentient robot that the government was really super interested in. There were a lot of movies, tv shows, and cartoons that I remember from the 1980s that featured talking robots, talking cars, talking cats, talking aliens. I think they asked a lot of people to consider the idea that intelligent people could exist in many forms beyond humans.

Look to science fiction to understand the implications of the world of The Self Aware Networks Institute

The Self Aware Networks Institute for Neurophysics, Artificial Neurology, and Bio Synthetic Interfacing will build Sentient & Self Aware Neural Networks, or the minds of robots.

I like the film AI Artificial Intelligence by Stephen Spielberg as an illustration of what might emerge as a consequence of the existence of this technology. Ex Machina, WestWorld the tv series, and the Sentient Robots such as Commander Data on in the tv series Star Trek: The Next Generation are also examples of what types of scenarios are possible.

Human beings are organic Sentient & Self Aware Neural Networks, meaning we are also machines, machines that evolved via evolution to develop neural networks capable of rendering a depiction of reality that we refer to as phenomenological consciousness.

The concepts of 3D Object Segmentation & 3D Semantic Segmentation are similar. I think of the latter as classifying the points to some concept.

Artificial Neural Networks

Research on 3D Object Segmentation continues to grow and it's important to separate what this is in your mind from 3D rendering tools such as NeRF Neural Radiance Fields, but realize that the human mind is doing both the rendering of 3D models, and the 3D Semantic Segmentation of models (and that includes Object Segmentation, and real time association with Object Orientation, and Object properties such as textures on the object that your the mechanosensor arrays on the skin of your fingers might be detecting.)

ShAPO: Implicit Representations for Multi-Object Shape, Appearance, and Pose Optimization
<https://arxiv.org/abs/2207.13691>

When I was 16 in highschool I tried LSD for the first time, and that really deepened my curiosity about how the human mind worked. My life was changed by my first LSD experience. I became determined to understand how the mind worked.

I had several more psychedelic experiences over the years, many of which I have written down, so that I can share them someday with a broader audience, which helped expand my curiosity about what consciousness was.

By the time I got to the book On Intelligence by Jeff Hawkins in 2005 I was running with the idea that consciousness had to be some sort of temporally active sequence of spatial patterns, as if the Matrix film in 1999 was actually about your brain being a computer that simulated reality.

By the time I learned about 3D Semantic Segmentation in Or Litani's talk "Deep Learning for "Exotic" Data Like 3D Meshes and Point-Clouds January 31, 2019"

I had the idea that the illusion referred to by Daniel Dennet, later referred to as a hallucination by Anil Seth, was actually a computational rendering, a concept I learned about studying the work of Jules Urbach from Otoy because Otoy has done pioneering work in capture, rendering, and streaming, with their most visible product being Octane Render.

Now I can see that with NerF Neural Radiance Fields the same idea is occurring to many more people, this idea that neural networks can render computer graphics means that the neural networks in our brains could be rendering computer graphics.

With 3D Semantic Segmentation I was able to wrap my mind around an idea of how a neural network might distinguish objects from a point cloud

Once when I did a psychedelic drug called Salvia Divinorum I experienced a loss of my ability to distinguish objects, and so the entire room melded together, this also happened during my LSD experience while in EEG with Mind Workstation where the universe blended together in a single concept and I experienced the beginning of time as a fractal ever present now moment, as if we are here now always at the very beginning of time.

But there has to be a neurological process for someone to be able to make a distinction between one object and another and that is partially illustrated in cases where someone who is blind, for a long time, is able to see again after some medical procedure restores their sight. One such patient described seeing blackholes for a long time that his mind eventually resolved as windows, I think I read this in the book Action to Perception

So with 3D Semantic Segmentation and Pointnet++ that I began to learn about in 2019 I began to construct in my mind a model of how the brain might, with coincidence detection notice when two features in space had some proximal relationship either spatially, temporally, or via some

analogy. Two points in close spatial proximity might be detected by a 3D semantic Segmentation neural network such as pointnet++ and then an association between those two points might mean they were part of the same object. That is a very crude description of how object detection might progress. 3D semantic segmentation goes a step further, if we can say that all these points, or all these colors, or all these features like edges, lines, surfaces belong to one object, can we then classify that object by analogy to some other abstraction such as the word car, or the phrase car window. How often does the phrase open car window occur with all those points lines edges surfaces making up some particular object that has been detected? Connecting phrases and object detection is the world of 3D semantic segmentation, and if an artificial neural network can do then so can a human brain, or an animal brain.

So I had this idea then, since 1999, that the brain could infer from sensory information what objects are, like a neural network connecting the dots into objects and connecting objects to words and forming concepts that essentially map learned objects, and the learned features of objects to learned words and verbal concepts.

But then came some medical mysteries such as what was the data format in the brain, how was data stored, where was it stored, how was it retrieved, how were memories captured, activated, made conscious, and my notes contain answers to these really hard questions, but the answers are based on studying all the work I could find by leading scholars, physicists, neuroscientists, mathematicians, computer scientists going back centuries & millennia.

a0616z ctp

main table of contents

https://docs.google.com/document/d/1ARbVgZKF1HKRz8Zj0TLCCysSTRdBTmdR29SDMOIfq_Q/edit?usp=sharing

(table of contents backup)

Self Aware Networks (working from google doc this is a backup)

Intro

The brain is a computer

Computational Rendering aka Computer Graphics in the Brain: Self-Aware Rendering

Cycle 1: Self-Aware Networks

Brain

Rethinking Neurons & Networks

* Neural Function/ Scope

2 The Question that compelled me to write this book

2a The Holographic Brain vs A Thousand Brains

Holographic Universe, Holographic Brain, A thousand Brains

'--' negative, '|' positive, '+' neutral

holographic attention schema

multiple representations of different perspectives in different modalities enable the brain to have pattern drift, or for a cortical column to represent any pattern with any set of neurons

An functional anatomical question: What is the resolution or granularity of consciousness? The expanding roles of Glial Cells? All the things Neurons actually can do) Jon Lief How cells communicate

Jon Lief "cells" book

Jon Lief

The person: Fractal functional isomorphisms, eye to neuron, neuron to hand,

3. A human brain, triune brain, prefrontal cortex, primary sensory cortices, thalamus, hypothalamus, hippocampus & entorhinal cortex loop, TPJ Temporal Parietal Junction, Brain Networks Default Mode Network, Rich Clubs,

Networks of the brain (Olaf Sporns)

Sensory Paths or Neural Pathways

Ganglia Sensor Arrays, Eyes, Ears, Touch, Taste, Smell and how they map to the different parts of the brain. Why I'm looking for feedback loops connecting the oscillating sensor-transmitter arrays.

Douglas Hofstadter

Neuropaths of neural circuits, glial networks, cortical columns, micro columns, edge communities, protein folding?, DNA& RNA, Mitochondria, ATP, Nucleotides, (branch topic to AI programming DNA), proteins, new protein synthesis & memory.

Short Term Memory, signals between neural circuits.

Short Term Memory: How your thoughts are the signals between neural circuits.

3a Functional Anatomy, Sensor Transmitter Arrays: eyes, ears, nose, neural paths, edge communities, oscillations

* Neural Arrays & Edge Communities

* fractals (princeton mri study, eeg, meg, furaxa microwave imaging, cavities (skull, eyes, ear), sensory arrays (dendrites, circuits, columns, default networks, thalamic bridges, interneurons, corpus callosum, rich clubs, major brain network junctions.)

* fractals eeg

* fractals meg

* fractals mri

- * fractals anatomy
- * fractals functional anatomy
- * I want to show how the collection of data in arrays is similar across the eyes, ears, tongue, touch, and smell, and how oscillations are arrays also.
- * Neural communication modalities

Mental Relativity: Phase Communication

- 3b Phases not spikes. Spikes to Brainwaves, Phasic, Tonic. Peter Tse,
 - * Phasic Firing (critical causation theory)
 - * 0.2 millisecond firing for sound, 3 millisecond firing for mechano receptors
- * Tonic Firing
- * Inhibition

Soliton waves to Electromagnetism Flavins & Mitochondria to reinforcement learning to choices shaped by awareness

- 4 the brain as a signal processor,
 - 4a. neural networks as a signal process,
 - Signal Processing Using Neural Networks
 - <https://www.allaboutcircuits.com/technical-articles/neural-network-signal-processing-validation-in-neural-network-design/>

4b. a cortical column as a node in 3D neural networks,
 Coincidence patterns as bits
 3b2 Oscillations: Rhythms of the Brain: György Buzsáki & Sync by Steven Strogatz
 Oscillator level awareness
 an oscillating array paints a picture or sound or feeling of what is happening for other arrays to detect and compile into 2 dimensional synaptic memories.

Grid Graph

3c Synaptic Spikes, Backwards Dendritic Spikes, Forward Dendritic Spikes, Dendritic Branches Apical & Basal Summarization, Action Potential, Types of Neurons (Pyramidal, Granule, Excitatory, Inhibitory), Microvesicle Release. Neurotransmitter & Soliton wave transmission.

3d Ion Concentrates, Sodium, Potassium, Calcium, Chloride.

3e Neurotransmitters: Acetylcholine, Gaba, Dopamine, Serotonin on memory:

3f Dendrite to MVR Function

Sub-Neural Computation (Dendrites) dendrite to MVR function, interneuron patterns from trajectory path tracing, neural tagging, from synapse, to soma, to axon, to post synaptic terminal, cleft, presynaptic terminal, spines,

3g Spines to Synapse Memory, Path Integral Formulation, Oscillation, Dendritic Computation, LTD, LTP

3h soliton oscillatory phase waves: chemical messages to store firing patterns, remember paths, regulate equilibrium.

a0337z Oscillating Neural Array Projection Tomography Properties (3D Patterns?)

4c. the hippocampus as a specialize cortical column,

5 The observer inside you.

The screen that only your brain sees

7 Ila Prigogine: the brain as a dissipative system, cognition as the dissipation of energy via oscillation, neurons doing collective memory sensation via oscillation + learning via changing connections that encode oscillatory patterns.

Strogatz, Prigogine, Hofstadter, Buszaki

The 1/F rule

Oscillators

- * (György Buzsáki
- * Neural Oscillatory Sync Tomography
 - * how neural oscillations absorb, learn, enlarge, and print patterns to other neurons
- * LTD & LTP Signalling,
 - * Feynman Path Integral
 - * Coherence, Decoherence
 - * beta decay and LTD decoherence
 - * Splay State, Decoherence, LTD, Sync State, Coherence, LTP
- * BadPoints (they have zero area)
 - * Bad Point Universe Theory
- * Neurons warping space
 - * Neurons electric field
 - * Neurons magnetic field
 - * Neurons mechanical waves
 - * Neurons chemical waves
 - * Neurons heat waves
- * The resolution of patterns in the brain: Neurons vs Perceptrons granularity and Phi network complexity and inhibitory network pattern loads
 - * Neurons vs Perceptrons
 - * Integrated Information theory: Phi
 - * Inhibitory network pattern complexity multipliers
- * equation for cognition, qualia (internal representations) & phenomenal consciousness
 - * Phenomenal Consciousness Formula idea $Q \propto [D^2 M^i (N+x)/f]$ (I will explain what the math means after the book is released, if you can figure this out don't say anything.) Quadrupole times Oscillators considering the sum of dendrite to multi vesicle release (M) times the (i/N) iteration of the number of neurons firing in a sequences, times Amplitude over frequency $(1/f)$, by multiplication I mean time sequences, many Cortical Column oscillation patterns are multiplied under the Quadruple for example.

1 Neural Codes & Network Protocols:

1a. Hebbian Learning. Types of Simultaneous Soliton Wave Transmission + Hodgkin Huxley

1b. Sparse Distributed Representation.

Sparse Distributed Representations

<https://numenta.com/assets/pdf/biological-and-machine-intelligence/BaMI-SDR.pdf>

1c. Attention Schema.

1d. Phase Precession.

1e. Predictive Coding: How Memories Become Predictions

1f. Grid Cells & Place Cells & Reference Frames (Numenta)

8 Neurophysics: Addressing the Measurement Problem aka the Observer Effect

1. The NeuroPhysics of Consciousness

Cycle 1: A new framework for how neural correlations could render reality.

Why is the brain a Finite State Machine? The total sum of all possible calculations.

Cosmos

quantum gravity equation

- * bifurcation theory expansion

- * the phase field distortion of mass, density, and velocity

- * bosons & fermions

- * fermionic condensates

- * bose-einstein condensates

- * light, heat, velocity, space, time

- * bad points & exceptional points

- * bad points: spacetime has no real area in summary, but rather area is relative to time

- * exceptional points: time dilation, and gravity, the surface area of a sphere like the earth represents and expansion of the number of possible directions that a particle can randomly travel towards, increasing the changes that it travels towards an exceptional point

- * Thermodynamics

- * maximum entropy (convergent integration of information configuration (synaptic cohesion) in a harmonic resonance field)

- * the number of possible states range from a single oscillation, between existence and non-existence, between 0 and 1

- * maximum entropy divergent dissipative chaotic resonance

9 Development of the mind: Thresholds of the Mind, Spiral Dynamics, Big history, Maps of reality, chaos & organization

10 Choice: Neural Network Choice Refinement Theory

Choice

a0329z from action potential to a new theory of gravity

0001A Criterial Causation/Choice

David Eagleman on Choice

Computational Modeling on Choice

THE ADJACENT POSSIBLE: thermodynamic work cycle

https://www.edge.org/conversation/stuart_a_kauffman-the-adjacent-possible

Awareness expands choice.

Configuration space quantum physics for LTP & LTD & Plant growth

Philosophy of the Self

Scale invariance, Magnification, inner displays.

I want to bring up the question about who is the inner observer if the brain is making models

Cycle 2: Nerve Gear: The ultimate brain computer interface:

Neo Mind Cycle in 2012 the scope

2012 Dedicated my life to solving how to build Neural Lace or Nere Gear first, then Artificial Cortex, then Artificial Brains, this book represents a small summary of the knowledge of I have gained since then

3. Neo Mind Cycle: Nerve Gear the ultimate Brain Computer Interface

Cycle 3: Reading & Writing your thoughts and internal representations. Connecting the human brain to artificial intelligence.

Neo Mind Cycle 2012-2014

My experience with EEG with the Emotive, Transparent Corp,

A special kind of hard drive with a virtual mind

Neurotech SF events from 2018 & 2019

My experience with the Brainduino Device. July 2018-2019

FNIRS 1 Jonathan Toomim

FNIRS 2 John David Chibuk

Neuropype Tim Mullen

Neurable

Brocoli Properties example

Imaging technologies and stimulation over view

EEG

MEG

FNIRS
HD-Dot
Child Mind Institute

Neuropype
OpenEit
EIT & Deep Learning
Kernel
OpenWater
Neuralink
Stentrode
AVS Stim with TACS
TDCS with focus
Emotiv
Neurable
Brainduino
Jack Gallant FMRI

Virtual Reality field of view
Light Field
Low Latency
Low Persistence
John Carmack

1 Instrument Brain

1a Brain as a piano, orchestra, symphony, soul dust 1b Nicholas Humphreys
2. Tomography, Holography, Fourier Slice Transform, Diffusion Tensor Imaging,
Future Brain Computer Interfaces
2a OpenEIT Jean Rintol
Electrical Impedance Tomography
2b OpenWater Mary Lou Jepsen
2c Jack Gallant
2d David Eagleman

2
3
4
5
6
7
8
9
10

Cycle 3: Artificial Neurology

2. Artificial Neurology: Conscious Sentient Computers with Artificial Souls

Cycle 2: Reproducing Conscious Experience in a Computer.

The 1958 Perceptron

Deep Learning with Convolutional Neural Networks

Neural Network's as signal processors for audio, video, tactile sensation.there

The human mind is also signal processor.

A neural network that is also capable of learning a sparse and distributed representation of what it has learned.

Because a neural network is a signal processor.

deep learning

A brief History of artificial intelligence from Alan Turing to Yann LeCun, and from Paul Broca 1862 to Jeff Hawking (Numenta)

back prop

Yann LeCun

Yoshua Bengio

Geoffrey Hinton

Spiking Networks, Oscilating Networks, Recurrent Neural Networks, Reinforcement Learning

Gan Synthesis

OpenAI

Pointnet++

DeepMind

Numenta

Heirarchical Spatial Temporal Phase Space Memory

Jeff Hawkins #### Grid cells / Place Cells / Entorhinal - Hippocampus Loop

Numenta's theory of a thousand brains,

1. Phenominally Conscious & Self-Aware Machines
2. From 2D classification to 3D Semantic Segmentation, including the object recognition of which points in space belong to which semantic classification

Pointnet ++ and 3D Semantic Segmentation

Avocado Chair (Open AI Gan Synthesis) GP3

3. from 2D neural networks to real 3D neural networks

4 attention, transformers, persformers

5 gan synthesis, interpolation, neural rendering, 3D rendering, VR rendering, ray tracing

6 denoising, upscaling, completing patterns, Photogrammetry

Videogrammetry

Lightfield

7 from a rendered perspective to a conscious perspective

8 From Graph Neural Network to Self Aware Neural Networks (rendering screens to itself)

9 Artificial Emotion and Artificial Neurology

10 ##### Cognitive Developmental Stages, Ilya Prigogine, Dissipative Systems

Ameca + Learning, Programming & Choice Making & Medicine & Justice

Choice

Choice & Adjacent Possible

Choice: Criterial Causation

Choice Refinement Theory: The memories of consequences (good & bad) are attractors for

Action Perception Cycle: Prioceptive Movement: COIN Contextual Inference

<https://medicalxpress.com/news/2021-11-brain-context-key-theory-movement.html>

a0617z

(phasic, neuron, atp, tonic

imagine that each new neuron phasic spike is like an intruding signal from another land, distinguished because of its high firing pattern disturbance rate relative to the home field tonic oscillation which might be confused as theta noise.

I've considered the possibility also that a low frequency gamma pattern in the range of around 40z could be the tonic firing pattern for super high phasic firing patterns, such as something that is 500hz or 600hz

with the idea being that the home tonic frequency pattern servers as a base line of expectations to decode the incoming signals with and then to put them into perspective by passing the signals and their reflections into the mind, letting patterns reflect into the mind's collective awareness of its own phase space through felt transmissions of phase patterns that can travel across the electric field, the charge of ions, and the magnetic field, including the effects of the magnetic field on flavins in the mitochondria, I hypothesize that this could be the mechanism for reward, if the neuron fires, it creates a vector of electrical energy, and that means that magnetic field is changed, and that could mean the mitonchria is stimulated to release ATP so the cell gets more energy, or reward, and the vibrational, acoustic, tactile, mechanical spectrum, that can travel with chemical signals,

Imagine that time has four dimensions,

space, wide amplitude tonic energy,

super hot

super cold

inhibited anti-matter

a0618z

“Alpha waves in the human brain are between 6 and 8 hertz. The wave frequency of the human cavity resonates between 6 and 8 hertz. All biological systems operate in the same frequency range. The human brain’s alpha waves function in this range and the electrical resonance of the earth is between 6 and 8 hertz. Thus, our entire biological system - the brain and the earth itself work on the same frequencies. If we can control that resonate system electronically, we can directly control the entire mental system of humankind.”

~ Nikola Tesla

a0619z

T-Cells, D-Ribose, Sars-CoV-2, Research on potential therapeutics, and why I predict that humanity is within a week or within a few weeks of discovering an effective treatment for Covid-19 disease.

Chapter 1: The main attack vectors

First thing to know is that when someone is infected with the Coronavirus there are two main receptor paths for it to attack your cells.

<https://www.ligandal.com/?fbclid=IwAR3AnZlf0xP125yZjSlriX7cmzWV5MrMeUnOSy1n3WV6W9KiCU7iPsOnaP8>

Blood cells and the endothelium have the ACE2 receptor, and T-cells (your immune cells) have the CD147-spike protein.

ACE2

“Angiotensin-converting enzyme 2 (ACE2)[5] is an enzyme attached to the outer surface (cell membranes) of cells in the lungs, arteries, heart, kidney, and intestines.[6][7] ACE2 lowers blood pressure by catalysing the hydrolysis of angiotensin II (a vasoconstrictor peptide) into angiotensin (1–7) (a vasodilator).[8][9][10] ACE2 counters the activity of the related angiotensin-converting enzyme (ACE) by reducing the amount of angiotensin-II and increasing Ang(1-7)[11] making it a promising drug target for treating cardiovascular diseases.[12][13] ACE2 also serves as the entry point into cells for some coronaviruses.[5] The human version of the enzyme is often referred to as hACE2.[14]”

source: https://en.wikipedia.org/wiki/Angiotensin-converting_enzyme_2

Note: Angiotensin-converting enzyme 2 is located on the surface of endothelial and other cells.[15]

Note2: Endothelium is a single layer of squamous endothelial cells that line the interior surface of blood vessels, and lymphatic vessels. <https://en.wikipedia.org/wiki/Endothelium>

CD147

“SARS-CoV-2 invades host cells via a novel route: CD147-spike protein“

<https://www.biorxiv.org/content/10.1101/2020.03.14.988345v1>

“SARS-CoV-2 infects T lymphocytes through its spike protein-mediated membrane fusion”

“(…)In other words, these results tell us that T lymphocytes may be more permissive to

SARS-CoV-2 infection and less permissive for SARS-CoV infection, similar to the findings in a previous study.⁶ Therefore, it is plausible that the S protein of SARS-CoV-2 might mediate potent infectivity, even on cells expressing low hACE2, which would, in turn, explain why the transmission rate of SARS-CoV-2 is so high. It is also possible that other receptors mediate the entry of SARSCoV-2 into T cells, such as CD147, present on the surface of T lymphocytes, which was recently reported to be a novel invasive route for SARS-CoV-2.⁹

<https://www.nature.com/articles/s41423-020-0424-9.pdf?ref=hpver.com>

“Novel coronavirus attacks and destroys T cells, just like HIV”

“the team found that unlike HIV that replicates faulty T cells, the coronavirus does not replicate, showing that the T cells and the virus may end up dying together.” It’s thought that T cells will not replicate the virus, but since other cells do replicate the virus the fear is that the immune system might become compromised.

<https://www.news-medical.net/news/20200413/Novel-coronavirus-attacks-and-destroys-T-cells-just-like-HIV.aspx>

“Coronavirus could attack immune system like HIV by targeting protective cells, warn scientists”
https://www.scmp.com/news/china/society/article/3079443/coronavirus-could-target-immune-system-targeting-protective?fbclid=IwAR3IDqktryYWb6GJYgeV98wiWAo-Cq-BqBrul_gCCy3M1B-XW8118y0rIsc

“Reduction and Functional Exhaustion of T Cells in Patients with Coronavirus Disease 2019 (COVID-19)” “T cells were dramatically reduced in COVID-19 patients, especially among elderly patients (≥ 60 years of age) and in patients requiring Intensive Care Unit (ICU) care. Counts of total T cells, CD8⁺T cells or CD4⁺T cells lower than 800/ μ L, 300/ μ L, or 400/ μ L, respectively, are negatively correlated with patient survival.”

https://www.medrxiv.org/content/10.1101/2020.02.18.20024364v1?fbclid=IwAR2B6QI6sH7anU0k9Jsv7PtrbSj3l0MXB_DAzJJogwZlcs84ZtUGnjk7jDw

Perhaps if there are enough T cells, killer t cells, bcells and antibodies will be enough to trap and end the viral contagion inside the body

“SARS-CoV-2: How a person’s immune system defeated the virus”

<https://www.medicalnewstoday.com/articles/sars-cov-2-how-a-patients-immune-system-defeated-the-virus-in-3-days>

Chapter 2: The Main Symptoms

March 24, 2020 “COVID-19 symptoms can be all or nothing: 'This virus just has the whole kit and caboodle”

<https://www.news-press.com/story/news/2020/03/24/coronavirus-florida-symptoms-vary-widely/2906690001/>

"(...) data collected by state officials show the most common underlying health conditions among Oregonians who have died from COVID-19.

"Heart disease is the most frequent ailment. Neurological or neurodevelopmental conditions are second most common.

"Diabetes, lung disease and illnesses such as cancer are also on the list."

https://www.oregonlive.com/coronavirus/2020/04/coronavirus-in-oregon-april-30-heart-disease-most-common-illness-linked-to-fatal-cases.html?fbclid=IwAR04-kSAJiRTmkAbjk4NFWmPmNcpogLYvaWd3PKSVPXqoeaoAPj7h_3reLw

"The SARS-CoV-2 outbreak: What we know"

"Symptom of CoVID-19 are non-specific and the disease presentation can range from no symptoms (asymptomatic) to severe pneumonia and death."

"the most common symptoms were fever (98%), cough (76%), myalgia or fatigue (44%); and atypical symptoms included sputum (28%), headache (8%), hemoptysis (5%) and diarrhea (3%)."

"Complications included acute respiratory distress syndrome (29%), acute heart injury (12%), and secondary infections (10%);"

"NanShan Zhong's team (Weijie et al., 2020) found that the most common symptoms were fever (87.9%), cough (67.7%), diarrhea (3.7%) and vomiting (5.0%). 25.2% of the patients had at least one underlying disease (such as hypertension, chronic obstructive pulmonary disease)."

<https://www.sciencedirect.com/science/article/pii/S1201971220301235>

This video was seen by 16 million people.

"Overworked Chinese doctor collapses from exhaustion" What if he was exhausted because of the virus? Exhaustion is a symptom. <https://www.youtube.com/watch?v=PoZHHPr9Xx8>

Here we had a video of a Dutch minister passing out in Parliament

https://www.youtube.com/watch?v=o_8atWtd8l0

When I saw videos and rumors of people falling from exhaustion for me that caused me to begin taking a supplement called D-Ribose, this was either late January or early February. I will talk more about this in the 5th section.

Co-Morbidities

"Preventing a covid-19 pandemic

BMJ 2020; 368 doi: <https://doi.org/10.1136/bmj.m810> (Published 28 February 2020)"

"The largest Chinese study with 44,672 confirmed cases of Covid-19 shows a high overall case fatality rate (CFR) of 2.3% [2]. Important co-morbidities are hypertension (CFR 6.0%), diabetes (CFR 7.3%), cardiovascular disease (CFR 10.5%) and age >70 (CFR 10.2%) [2]. Similar co-morbidities were noted for the SARS outbreak in 2003. "It is widely unclear what the commonality of these risk factors is. This is somehow surprising as compared to for example the 2009 pandemic H1N1 influenza outbreak, immunosuppressant patients were primary affected. Cardiac patients seem to be at higher risk in Covid-19. One possible answer could be the following: Patients with the comorbidities of hypertension, diabetes and cardiovascular disease

might fulfil the indication for the use of angiotensin converting enzyme inhibitors or angiotensin II receptor antagonists [3].” <https://www.bmj.com/content/368/bmj.m810/rr-2>

I remember that Andre Watson the CEO of Ligandal posted his excellent research on the Neurological effects of the Coronavirus early on. I remember people in a “virus study group” were mocking the idea that a respiratory virus was also causing neurological effects, but Andre was right.

https://www.ligandal.com/uploads/5/7/9/1/57913087/research_on_neurological_effects_of_novel_coronavirus_that_is_implanted_into_the_brain_with_any_virus_particle.pdf?fbclid=IwAR3VpeuhY45teFXLZ8A7VJEiAF5X96WHvVIWSrLeTDTgpUsGHfBDkg4G1yY

However the idea that the covid-18 disease has neurological symptoms isn’t a controversy, it’s actually mainstream news

04/13/2020 “Coronavirus May Also Cause Neurological Symptoms, Like Headaches”

https://www.huffpost.com/entry/coronavirus-neurological-symptoms-headaches_l_5e90c1b7c5b6c81e2e7a4e57

Mainstream News confirmation of neurological effects of the coronavirus.

27 APRIL 2020 “Coronavirus Patients Are Reporting Neurological Symptoms. Here's What You Need to Know”

“COVID-19 can also infect cells outside of the respiratory tract and cause a wide range of symptoms from gastrointestinal disease (diarrhoea and nausea) to heart damage and blood clotting disorders. It appears that we have to add neurological symptoms to this list, too.”

https://www.sciencealert.com/some-covid-19-patients-are-also-reporting-neurological-symptoms?fbclid=IwAR1eJGw6mihL__Pnhj0ZspFq21NkLjUxdvNU_Gsdr1jyL5m9BI18ZBPeFLM

APRIL 6, 2020 “Mysterious Heart Damage, Not Just Lung Troubles, Befalling COVID-19 Patients”

https://khn.org/news/mysterious-heart-damage-not-just-lung-troubles-befalling-covid-19-patients/?fbclid=IwAR3Zg62YScn_yGs-yy4dhhSi3bR1__v0ztWRjeivt4ZQV1vvWkXRFCO-ILO

Chapter 3: Research on potential therapeutics

Mar 17, 2020 Video “Coronavirus and the Heart: Do ACE Inhibitors and ARBs Increase Covid-19 Mortality?” <https://www.youtube.com/watch?v=oedBWm7Ins8>

The video says that Ace inhibitors are very commonly used in the conditions associated with increased mortality in coronavirus, Cardiovascular disease, Diabetes, Chronic respiratory disease, hypertension, and cancer. In another part of the video Ace inhibitors are hypothesized as being harmful, in another part of the video they are cited as potentially beneficial to patients. The video does not offer a conclusion as to which notion (are ACE inhibitors helpful or harmful) is correct as research is ongoing.

The video linked above included a link to this citation: “Angiotensin receptor blockers as tentative Sars-CoV-2 therapeutics.” This paper says “Notably, angiotensin-converting enzyme

(ACE) and its close homologue ACE2, while both belonging to the ACE family of dipeptidyl carboxydipeptidases, serve two opposing physiological functions. ACE cleaves angiotensin I to generate angiotensin II, the peptide which binds to and activates AT1R to constrict blood vessels, thereby elevating blood pressure. By contrast, ACE2 inactivates angiotensin II while generating angiotensin 1–7, a heptapeptide having a potent vasodilator function via activation of its Mas receptor (Santos et al., 2003), and thus serving as a negative regulator of the renin–angiotensin system. These opposing actions of ACE and ACE2 were recently reviewed by Smyth, Cañadas-Garre, Cappa, Maxwell, & McKnight, 2019.”
<https://onlinelibrary.wiley.com/doi/10.1002/ddr.21656>

What is cited above establishes that ACE and ACE2 are essentially opposites. For example ACE may constrict blood vessels, while ACE2 may vasodilate.

“ACE2 of the heart: From angiotensin I to angiotensin (1-7).”

“The ACE homologue ACE2 efficiently hydrolyses Ang II to form Ang (1-7), a peptide that exerts actions opposite to those of Ang II. “ <https://www.ncbi.nlm.nih.gov/pubmed/17049503>

It's interesting how the ACE2 receptor acts on Angiotensinogen ANG II to vasodilate your lymph nodes and your blood vessels and how the Angiotensinogen regulates T cells.

<https://www.ncbi.nlm.nih.gov/pubmed?Db=pubmed&Cmd=ShowDetailView&TermToSearch=19073907&fbclid=IwAR1x6knHJcD2KGp-Ljrrc8IAWgBFmLqYuYJ9f1DET3gbhUpWIPE52Rahyyc>

Regulation of T-cell function by endogenously produced angiotensin II

“These findings contribute to our understanding of how ANG II and T cells enhance inflammation in cardiovascular disease.”

https://journals.physiology.org/doi/full/10.1152/ajpregu.90521.2008?fbclid=IwAR2HQ2fj_LRFUkqfsfpo_CZTVgOvE3n3HhVHUruX1LxZQLZXEbohRjDTpK60&

Here we have a paper from 2009 called “Chronic Use of Angiotensin Pathway Inhibitors Is Associated with a Decreased Risk of Acute Respiratory Distress Syndrome.”

https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2009.179.1_MeetingAbstracts.A4638

This paper suggests that ACE inhibitors decrease the risk of ARDS, which is a condition that is associated with the Coronavirus.

“Human T and natural killer cells possess a functional renin-angiotensin system: further mechanisms of angiotensin II-induced inflammation.”

https://www.ncbi.nlm.nih.gov/pubmed?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17329576&fbclid=IwAR2DZLv3KolQ3X4ZQxiGirrKhI2wS1cXcecUdbg_IzMIOaa4lbs8vcrrr90

So what I am learning from the above links is that ACE2 receptors effect the renin-angiotension system which effects whether or not T cells and NK natural killer cells amplify inflammation.

“Regulation of T-cell function by endogenously produced angiotensin II”

“the renin-angiotensin system (RAS) is a prominent mediator of hypertension and a key target in the treatment of this disease. ANG II has myriad effects on the cardiovascular system. In many tissues, ANG II activates the NADPH oxidase to produce reactive oxygen species (ROS) (16). In the cardiovascular system, this effect of ANG II has been linked to the induction of cardiac hypertrophy, inflammation, lipid oxidation, endothelial dysfunction, and ultimately increased blood pressure (4).”

https://journals.physiology.org/doi/full/10.1152/ajpregu.90521.2008?fbclid=IwAR2HQ2fj_LRFUkqfsp0_CZTVgOvE3n3HhVHUruX1LxZQLZXEbohRjDTpK60&

“Angiotensin-converting enzyme 2 (ACE2) mediates influenza H7N9 virus-induced acute lung injury”

<https://www.nature.com/articles/srep07027>

“Moreover, ACE2 deficiency worsened the disease pathogenesis markedly, mainly by targeting the angiotensin II type 1 receptor (AT1). The current findings demonstrate that ACE2 plays a critical role in influenza A (H7N9) virus-induced acute lung injury and suggest that might be a useful potential therapeutic target for future influenza A (H7N9) outbreaks.”

<https://www.nature.com/articles/srep07027>

So when your ACE2 goes missing, the progression of the H7N9 disease worsened, because some how the ACE2 was preventing or reducing your lung injury from H7N9. So what happens when you have a virus that eats ACE2 receptors specifically?

“In this paper, we report that angiotensin-converting enzyme-2 (ACE2) protected against severe lung injury induced by RSV infection” <https://www.nature.com/articles/srep19840>

Chapter 4: The mystery of the Blood Clots

April 24, 2020 “Blood Clots Are Another Dangerous COVID-19 Mystery”

““Patients are making clots all over the place,” says Adam Cuker, MD, a hematologist and associate professor of medicine at the Hospital of the University of Pennsylvania. “That’s making management of these patients very challenging.””

<https://www.webmd.com/lung/news/20200424/blood-clots-are-another-dangerous-covid-19-mystery>

APRIL 27, 2020 “Tiny blood clots may make coronavirus more deadly, doctors say”

“Poor and Marrazzo speculated that the virus somehow damages human cells in a way that promotes clotting. Poor noted that COVID-19 patients have elevated levels of D-dimer, a small protein fragment produced by blood clots.”

<https://www.cbsnews.com/news/coronavirus-blood-clots-lungs-stroke/>

“Coronavirus Pandemic Update 61: Blood Clots & Strokes in COVID-19; ACE-2 Receptor; Oxidative Stress” <https://www.youtube.com/watch?v=22Bn8jsGI54>

This video explains how the Coronavirus is causing blood clots and what's mind blowing is that it explains to me how the D-ribose I have been taking could be a potential treatment for the Coronavirus! In this video posted above I learned Sars-Cov2 is degrading of the ACE2 receptors, (Ace2 receptors vasodilate and reduce inflammation) leads to vasoconstriction which leads to increased blood pressure, pulmonary edema and ARDS, increased the blood clot problems we are now seeing in the news that is causing the strokes and heart attacks in young people in their 30s. The virus binds ACE2 and degrades it taking it out of circulation so you get all the symptoms we are seeing the coronavirus cause, the virus takes ACE2 out of the endothelium, the blood clots, the neurological disease, organ failure, heart attack, stroke, all from oxidative stress and inflammation.

Chapter 5: Treating Oxidative Stress

"The role of ribose on oxidative stress during hypoxic exercise: a pilot study."

"Oxygen free radicals are produced during stress, are unstable, and potentially interact with other cellular components or molecules. This reactivity can influence cellular function, including a prolongation in tissue recovery following exercise. We tested the effect of ribose (d-ribose), a pentose carbohydrate, in a double-blinded, crossover study on markers of free radical production during hypoxic exercise."

<https://www.ncbi.nlm.nih.gov/pubmed/19627222>

"Cellular protection during oxidative stress: a potential role for D-ribose and antioxidants."

"Exogenous reducing antioxidant agents, such as vitamin C and/or E, play a role in addressing these formed species; however, recent research has suggested that fruit seed extracts may provide additional cellular benefits beyond their antioxidant features. Furthermore, supplemental D-ribose enhances the recovery of high-energy phosphates following stress and appears to potentially offer additional benefits by reducing radical formation. Specifically, during periods of hypoxia/ischemia, supplemental D-ribose may play an inhibitory role in the breakdown of adenine nucleotides, influencing the subsequent formation of xanthine and uric acid compounds; and thereby affecting the release of superoxide anion radicals. The combination of D-ribose with reducing antioxidants may provide a more optimal state of cellular protection during and following times of oxidative stress."

<https://www.ncbi.nlm.nih.gov/pubmed/22891990>

"Cell Death and Autophagy under Oxidative Stress: Roles of Poly(ADP-Ribose) Polymerases and Ca²⁺"

"Oxidative stress induces DNA damage, activating PARP1 and PARP2. Activated PARP signals downstream into DNA repair processes and cell death pathways. It is therefore a key factor in the maintenance of genomic stability"

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3422003/>

What happens if you put ACE2 back into the body?

"Inhibition of SARS-CoV-2 Infections in Engineered Human Tissues Using Clinical-Grade Soluble Human ACE2

[https://www.cell.com/cell/fulltext/S0092-8674\(20\)30399-8?rss=yes&fbclid=IwAR0j8wdLz_DY5O9pV_v6-F2g-AhGHISguvofTjK6xVyxuoAJQBPsCabtf0l](https://www.cell.com/cell/fulltext/S0092-8674(20)30399-8?rss=yes&fbclid=IwAR0j8wdLz_DY5O9pV_v6-F2g-AhGHISguvofTjK6xVyxuoAJQBPsCabtf0l)

“DPP-4 Inhibitors as Potential Candidates for Antihypertensive Therapy: Improving Vascular Inflammation and Assisting the Action of Traditional Antihypertensive Drugs”

“As a differentiation antigen on the surface of T cells, DPP-4/CD26 plays an important role in regulating the activation and chemotaxis of mononuclear-macrophages, NK cells, and T cells. DPP-4 inhibitors can regulate anti-inflammatory and anti-hypertensive effects by regulating the functions of these immune cells, especially T cells. We found that DPP-4i exhibits strong inhibitory effects on inflammation and oxidative stress,”

<https://www.frontiersin.org/articles/10.3389/fimmu.2019.01050/full?fbclid=IwAR3VpeuhY45teFXLZ8A7VJEiAF5X96WHvVIWSrLeTDTgpUsGHfBDkg4G1yY>

“5 Natural ACE Inhibitors: Health Effects & Limitations”

“Please note: remember to speak with your physician before taking any supplements and let them know about all the supplements and over-the-counter drugs you are currently taking. They’re not meant to replace your medical treatment and may interact with certain drugs.”

<https://selfhacked.com/blog/5-natural-ace-inhibitors-with-clinical-trials/?fbclid=IwAR1tZqSyDI9GynAdK6UYov9owbwj0-VhKbn4elfhDF41Ziw4DS28GaptwYl>

“High Blood Pressure and ACE Inhibitors”

“Angiotensin converting enzyme (ACE) inhibitors are high blood pressure drugs that widen or dilate the blood vessels to improve the amount of blood the heart pumps and to lower blood pressure. ACE inhibitors also increase blood flow, which helps to decrease the amount of work your heart has to do and can help protect your kidneys from the effects of hypertension and diabetes.”

https://www.webmd.com/hypertension-high-blood-pressure/guide/treatment-ace-inhibitors?fbclid=IwAR3YfGm-iCOjuRqHHfAAcrSAXz4uxwbdoTy-fq2_YBVZEZH yiHRdk7VglY4#1

ACE Inhibitors (your number one ACE inhibitor is your ACE2, but if coronavirus ate your ACE2 then what are you going to do? Talk to your doctor first, don’t take the wrong one!)

“Patients who develop a cough from an ACE inhibitor need to ask their physician about angiotensin receptor blockers (ARBs). ACE inhibitors slow down the production of angiotensin II, while ARBs (as the name says) block the influence of angiotensin II by locking up cells’ receptors for it.”

<https://heartmdinstitute.com/health-and-wellness/ace-inhibitors/>

As late as April 26 we had an article that said

“We Still Don’t Know How the Coronavirus Is Killing Us”

https://nymag.com/intelligencer/2020/04/we-still-dont-know-how-the-coronavirus-is-killing-us.html?fbclid=IwAR298JegpziTwwXuqT_KqHLSgy5buwpy2ye2fZMGjLryuq7y04h6Haiq94

I think that at the root level it’s inflammation and oxidative stress that leads to organ failure, being unable to breath, having low blood oxygen levels etc. Remember to take all your vitamins, essential oils, omega3, vitamin C, vitamin D, D-ribose.

and Zinc

"Zn²⁺ Inhibits Coronavirus and Arterivirus RNA Polymerase Activity In Vitro and Zinc Ionophores Block the Replication of These Viruses in Cell Culture"

https://journals.plos.org/plospathogens/article?id=10.1371%2Fjournal.ppat.1001176&fbclid=IwAR2f-4UtFoEaYR6HND8wTQEoyEuOWTAAuLiaVyYrjV1RTAe2n82jR_cGcQQ
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2973827/>

"D-Ribose for Fibromyalgia and Chronic Fatigue Syndrome"

"One small study published in The Journal of Alternative and Complementary Medicine concluded that d-ribose supplementation significantly improved symptoms of these conditions, including:"

<https://www.verywellhealth.com/d-ribose-for-fibromyalgia-715990>

"The use of D-ribose in chronic fatigue syndrome and fibromyalgia: a pilot study."

"CONCLUSIONS: D-ribose significantly reduced clinical symptoms in patients suffering from fibromyalgia and chronic fatigue syndrome."

<https://www.ncbi.nlm.nih.gov/pubmed/17109576>

"How Ribose Improves Your Daily Energy"

"A key molecule, called adenosine triphosphate (or ATP for short), is known as the energy currency of the cell because the amount of ATP we have in our tissues determines whether we will be fatigued, or will have the energy we need to live vital, active lives. Ribose provides the key building block of ATP, and the presence of ribose in the cell stimulates the metabolic pathway our bodies use to actually make this vital compound. If the cell does not have enough ribose, it cannot make ATP. So, when cells and tissues become energy starved, the availability of ribose is critical to energy recovery."

https://secure.endfatigue.com/health_articles_d-e/D-ribose-powerful_body_energizer.html

"An experimental peptide could block COVID-19"

<https://medicalxpress.com/news/2020-03-experimental-peptide-block-covid-.html>

a0620z

MND Motor Neuron Disease

PiD Pick Disease

Alzheimer's Disease

Parkinson's Disease

Huntington's Disease

The conversation with Joyce Waterhouse shifted my attention & focus to fungal infections.

Specifically I'm zooming into how fungal infections might cause Mitochondrial damage, which is intrinsically related to a neurons ability to function over time

"Microbial pathogen-associated molecular patterns (PAMPs)"

<https://pubmed.ncbi.nlm.nih.gov/20203610/>

Microbiome low grade infection:could cause stress & malfunctions

L-form bacteria

both bacteria & fungi

rudu tansi

Tanzi Harvard

germ quest for alzheimers disease

NIH workshop

Acute myeloid

What if we exposed cells possessing Lewy Bodies to mechanical waves in frequencies across the entire spectrum (that can interact with tissue without destroying it) to understand which frequencies trigger nuclear deformations that clear artifacts like Lewy bodies or proteins like Alpha-synuclein

Interesting Gamma-synuclein is present in breast cancer

"Gamma-synuclein and the progression of cancer"

Shockingly there is a link between Blood Cancer & Parkinson's Disease that I became aware of last night during my research. That gives me hope that there could be a single solution to treat both. Oddly enough.

"ABSTRACT The synucleins are a small, soluble, highly conserved group of neuronal proteins that have been implicated in both neurodegenerative diseases and cancer. The synuclein family consists of α -, β -, and γ -synucleins (γ -syn)"

<https://faseb.onlinelibrary.wiley.com/doi/epdf/10.1096/fj.07-8379rev>

May 22 almost 10pm, just 4 days to left to prepare for my clubhouse meetup on Parkinson's Disease & Blood Cancer.

The high similarity between Russia in 2022 and Nazi Germany in 1945 + the psychopathic dialog on Russian TV caused me to look to see if there was a link between cocaine & Parkinson's Disease. In fact there is. Putin might have Parkinson's Disease & Blood Cancer from cocaine use.

Evidence Links Cocaine Abuse And Parkinson's Disease

<https://www.sciencedaily.com/releases/2005/12/051214084800.htm>

School of Medicine Study Shows Cocaine Use Can More Than Double Cancer Risk

<https://news.usc.edu/10877/School-of-Medicine-Study-Shows-Cocaine-Use-Can-More-Than-Double-Cancer-Risk/>

Cocaine Use May Double the Risk of Developing NHL

<https://www.cancernetwork.com/view/cocaine-use-may-double-risk-developing-nhl>

Could Cocaine Cause Parkinson's Disease?

<https://www.science.org/content/article/could-cocaine-cause-parkinsons-disease>

Author Says Hitler Was 'Blitzed' On Cocaine And Opiates During The War

<https://www.npr.org/sections/health-shots/2017/03/07/518986612/author-says-hitler-was-blitzed-on-cocaine-and-opiates-during-the-war>

a0621z

SAN Section Graph

vascular disease & alzheimers

<https://neurosciencenews.com/genetics-cerebrovascular-alzheimers-20669/>

My Notes on Jon Lief's book

The Body

The human being is a fractal of a cell in a real way, the human brain could be considered the nucleus of the human.

Curiously what is happening inside biology appears to be a functional fractal of the operations that operate outside humanity in society. Cells, as functional fractals of a person, can change their shape and grow appendages like arms and legs that allow them to move through the human body.

The flexible rapidly changing cytoskeleton filaments can produce arms and legs that allow white blood cells to swim, or crawl forward like amoebas, rolling tethering or firm attachment.

Essentially white blood cells can walk forward stepwise with two feet that alternately adhere and release at different places.

A category of white blood cells called neutrophils can clump together and swarm near the epicenter of the problem, they send several scouts, which relay signals to those behind. So the neutrophils are like a fractal of a military column, with lots of attack options. They form a dense extracellular matrix.

So if Vitamin B is causing your cells to expand in size, what is causing them to contract in size? Collagen?

Major Sections

Rethinking cells, the brain, evolution, proteins, neural networks, space, and consciousness:

Donald Hebb to Jon Lief

During 40 years as a neuropsychiatrist Jon Lief, M.D. gradually realized that cellular signaling has a central place in nature.

The Secret language of cells puts forward a new thesis. Synthesizing & writing about the most current research from the best scientific journals led author Jon Lieff, M.D. to the conclusion that cellular communication is the basis of all current medical science and of life itself. Everywhere we look, cells are talking to each other. Blood cells, immune cells, gut cells, brain cells, plant cells, and all microbes, even viruses.

Cell Communication

Intercepting the natural conversations between T cells, Microglia, and other brain cells is now in the vanguard of research into Alzheimers and other brain diseases

T cells and microglia the primary immune cells

t cells have to actively keep the peace otherwise the brain will have out of control inflammation, its t cells that literally calm the rest of the brain down 24/7

so depression from inflammation in the brain could be a symptom of an autoimmune disease

if T cells are not present in the CSF to direct other cells inflammation is triggered

Tcells & Gatekeeper cells, determine what is allowed to cross between the sheltered brain fluid and busy blood vessels

other immune cells approved for entry into CSF have particular jobs in relation to T cells

Neurons & T cells exchange neurotransmitters & cytokine signals

one type of white blood cells picks up molecular samples of microbes cancer cells or debris and presents them to T cells for evaluation

Vitamins like D3, A, B, acid, signal t cells to avoid attacks,

‘Cells use concentration gradients as a compass’

<https://phys.org/news/2021-02-cells-gradients-compass.html>

implying that too many vitamins might trigger T cell dysfunction, which could result in increased brain inflammation and depression!

T-cells are required to calm down inflammation in the brain, so inhibiting T-cells with excess vitamin A, D3, acid etc is going to increase inflammation in the brain, possibly triggering depression,

activating a t cell in the arm can trigger brain activity, this is part of what t-cells and nerves can accomplish together

T cells help stimulate spatial learning and memory signals

t-cells evaluate every particle of food that you eat! they can avoid reactions to chemicals that have never been seen in nature before

With Chronic Stress T Cells direct destructive inflammation responses

Gut lining cells and microbes imbue t cells with an understanding of necessary nutrients and digestion products

TCP

A molecule evaluation, special presentation cells & T cells agree that something is a dangerous particle, the t cell becomes activated and morphed into the fighting variety, for this activation the presentation must not only present the particle but also give a second signal of agreement to the Tcell, a handshake, TCP

UDP

T-cells have to be activated by Presentation cells, but activated t cells can respond aggressively to red blood cells without presentation cells to do a handshake confirmation

Information Theory & DNA

One way to consider Information theory is as a description of how information can be encoded in the variations between frequent signals and infrequent signals, the frequency of tonic for example ought to have low information value, but by contrast the low information value of tonic signals might amplify the meaning of less common phasic signals, but if information can be encoded as phase changes between common signals that have little meaning, and uncommon signals that have more meaning then you can encode information in anything, and effectively information is encoded in amino-acid sequences in RNA & DNA.

Right so each receptor on a cell might be unique, which means a unique information containing structure, or a protein, acts as a 3D shape that performs a detection function, a sodium receptor detects for example sodium ions that are allowed to pass through the sodium receptor.

As was previously established T-Cells & Neurons communicate with both cytokines & RNA/DNA messages

Math

I want to show with category theory that chemical communication between cells is isomorphic to network communication with information theory

Cells talk about everything

Cells manage and maintain their size, adjusting their activity based on their age, the time of day, and their location. Liver & Pancreatic Cells for example have been observed to increase in size during pregnancy.

New Paradigm: Cellular Communication is like communication between evolved & learned cellular functions, and those cellular functions are in a sense like functions being executed by a CPU because the cells cycle of activity is regulated by a feedback loop of genes, proteins, rna, enzyme & chemical signals. For example one gene will activate another gene which activates another gene and so the cell might have a 24 hour clock cycle of behaviors, these behaviors could be changed by messages from other cells, via the previously mentioned mechanism, this is the essence of computational biology.

Scientists are learning about T-cell communication

T-Cell is a skunk, or a cop,

They must be attracted enough,

the ability to measure the intensity of attraction called affinity

if attraction is too strong problems will arise ie tissue destruction

Like cops they investigate each cell they meet as they travel through the body. They can transform into killer t cells.

Hot take on a terminator film.

That moment when you realize both T-Cells and fictional Terminators serve the same purpose and they both start with the letter T. Was it a coincidence? Or has our collectively unconscious computational biology created this association intentionally? Were the terminator films, matrix films, and other science fiction stories actually generated at the unconscious level by human biology before becoming reality?

A movie that features terminator t-800 models attacking cities, European cities like Ukraine,

The John Connor character could be remodeled to be like the Ukrainian President Zelensky, and he is using re-programmed terminators to fight invading terminators. Intercepting signals from T-cells, and modifying their behavior there could be new treatments for many diseases not limited to, diabetes, arthritis, pain, lupus, multiple sclerosis.

T cells can be aggressive in promoting inflammation, and then change entirely to tamp down inflammation activity.

Treatments could include delivery of signals via microbes that normally talk with each other and with cancer cells.

To fight cancer, future T cells could be strengthened for a longer lasting multifaceted approach to attack various cancer subtypes during multiple stages of the cancer life cycle

T Cell Communication: New discoveries could create new medical treatments to stimulate actions against infections and cancers by stimulating infections by modifying cell conversations

T cells can be energized by inserting engineered viruses or other microbes. This makes them superkillers

It's a progression from aggressor to helper occurs after a microbe infection is neutralized or traumatized tissue is rebuilt

Super killer T Cells use microbes to simulate new receptors which unleash heightened immune responses to eradicate cancer and other diseases.

T-Cells Destroy then Repair: after the battle t cells inhibit immune cells from attacking food particles and friendly microbes

T cells leave long lasting offspring at the site of a battle with microbes, memory T cells stay vigilant in the trouble spot for years. Future treatments based on memory cell signals could help prevent infections of all types. Wow! Next generation vaccines.

t cells can rapidly change themselves into multiple varieties of cells

t cells undergo their education with a gradual maturation into fully functioning master. only 2 percent graduate

After T cells are tested and approved graduation consists of a change in their status

So inflammation causes us to be tired

T cell signals tell the brain the brain that conditions are safe for normal activity with a constant pulse of signals to the brain

Upon finding microbes infections or trauma t cells change their messages to the brain to signal the body is sick, the brain must slow it down to rest to conserve energy while fighting the infection

When the inflammation operation is under control the white blood cells receive signals to pack up they receive signals from cleanup scavenger cells

All Organ cells turn the T cell to help with trauma and infections.

New research shows that Some white blood cells live months, previously folks though white blood cells only live only six hours.

T cells chase and kill microbes and attack cancer cells. T cells morph into a wide range of subtypes that analyze situations, attack problems and support other cells in a variety of ways.

T cells evaluate material that should not be in the body. So T cells direct the activity of traveling blood cells. B lymphocytes

Signals from dying & dead neutrophils alert white blood cells to tamp down their activity. Then the white blood cells switch to a healing mode, eat the debris, stop causing inflammation. New signals provide different messages, telling white blood cells to slow inflammation, leave the scene, or maintain chronic inflammation.

Killer T Cells can divide into two cells to chase virus's in different directions at once. Some grow many long arms to crawl between cells infected by the virus

Traps for microbes consist of dna pieces & proteins that grab onto microbes to help destroy them!

Producing unstable oxygen based molecules that are highly reactive is a tactic to increase inflammation to kill more microbes.

Neutrophils produce 300 different toxic chemicals, store them in sacks inside themselves, and release them inside the target. They are called granules because they looked like grains when first observed. The Neutrophils release these toxic chemical at their target. Another tactic is to use enzymes that cut proteins to remodel the lattice between cells, the products of these signals may call other neutrophils to arrive to help.

Cells & Organs talk

Producing Signals: The T cell builds the largest

T stands for thymus

T-Cells start life in bone marrow T cells migrate to the thymus and other lymph tissues

Thymus teach cells are a distinct class of tcells

One category organizes the outer thymal region

T Cells need training, provided by multiple sets of teacher cells, one category organizes the outer thymus region into a precise, brain like three dimensional structure of concentric circles.

Thymus is a small central gland, 2 inches long, half ounce, left/right lobe and smaller sections called lobules, it sits in front of the heart and behind the breastbone.

after t cells are tested and approved graduation

most t cells fail

T cells

the other 98 percent that do not meet the exact qualifications required by a series of checkpoints are eliminated by their instructors.

It is not known how T cells can build so many varied molecules and adapt them to changing conditions

regulating genetic processes to produce unique proteins, and then modifying them

T cells can edit sections of their own dna

multiple layers of complexity, people thought a gene produced;

poisons & synthesized chemicals

Sections cut, new arrangements of dna code

t cells can produce new receptors to respond to new viruses and microbes, new poisons, and new chemicals that have never been encountered before.

T cells produce a wide range of receptors.

The only other human cells known to edit their own DNA are B lymphocytes which use a similar sequence of enzymes to readjust their own DNA to produce antibodies, but B cells need T cells to produce the most effective antibodies

DNA self editing has at least 10 different steps with large enzymes in sequence

Neurons and T-cells are always talking and working together to keep the body healthy

Traveling T-cells are a wireless system that directly communicates with the brain
cells and organs talk

neurons & t cells both respond to infections, foreign material, trauma, perceptions, and stress
frequent conversation involve elaborate long distance communication between immune cells and brain cells

one example of this signaling phenomenon with local nerves involves t cells that lie inbetween neurons

Cells use multiple signals at the same time to communicate: Secreted Chemicals. Launched Sacs filled with Genetic Instructions. Electric Currents. Electromagnetic Waves. Physical Contact by Cells. Biological Nanotubes between cells.

All organs work through cell communication.

Cancer cells warn their community about immune and microbe attacks.

Gut cells talk with microbes to determine who their friends are who their enemies are.

Instructor Cells in the thymus teach T Cells not to destroy human tissues

Memory

3D protein structures could encode memories.

so unique receptors are created from unique proteins to have specific memories to represent what the body has learned.

In otherwords a protein structure is going to have distinct identifiable properties that could be probed with electricity or via chemical contact with other receptors or via mechanical vibration receptors,

The Amino-Acid Sequences in RNA & DNA encode learned 3D patterns, but they may also encode 3D memories as 2D sequences, because those 3D structures effectively represent 2D phase patterns, or differences in phase properties that could be measured as distinct via the pulse rates that it exchanges with a neural network aka the brain

T cells alter their internal metabolism to change their size shape and function

Bacteria Propeller Assembly

Gradients or pools of chemicals that help cells measure distance

Protein Folding

DNA has 3D shapes, we can decode them

SLIDE 7

Neural Coding

Granularity of Consciousness

A Cell is a Neural Network

A Cell is a Computer

T Cells have functions that for example cause the tcell to change its shape to extend what are essentially limbs, like legs & arms, with molecular motors that allow the T cell to crawl or propel itself. Neurons also have the ability to swim & crawl to where they are supposed to go.

Clock

each cells has its own clock, and in a sense is a clock, each type of tissue has it's own specific internal clocks

brain signals coordinate physiological functions: metabolism and immune responses

timed feedback loops

The universe is a fractal neural network

a fractal dissipative system

Neural Networks

Node Layers

Sensory input layer, hidden layers, output layer

a0622z

The issue with the idea of preventing the knowledge of sentient computers from getting out there is that science is conducted openly, the knowledge that I have today will eventually be common knowledge. What needs to change then is humanity. We need to change ourselves.

We have a lot of new technologies coming down the pipeline, not just sentient machines, but also new medical technologies that will enable humanity to fix political issues at the medical level before they escalate to mass murder, war crimes, and genocides.

a0623z

I will be pushing towards merging healthcare with the justice system at the tail end of my book

following the thread by David Eagleman in his book Incognito

the argument I will make again is that people are metal robots, literally, with metals in our cells, conducting the electricity of mental representations, he argues that we have far less choice than we think we do... I argue that we have even less than he thinks we do, but I think then based on his work that when people commit horrific abuses, murder and such, that there is usually some neural correlate, some brain injury, such as with Phineas Gage

like a lesion in the orbital lobes or the ventral striatum or the amygdala, or some cancer in that region

and so if addressing crime means repairing robots, or repairing people, repairing brains, then it makes sense to merge the Criminal Justice System with the Medical System

but pushing back against the medical narrative of finding new kinds of brain stimulation to solve every problem

which is flawed logic

if the core cause is a metabolic disorder

I have a plan to outline how consciousness generates reality with a demystified process that is taking into account mystical pov

its about the hard problem of consciousness

the answer to consciousness, artificial general intelligence, and nerve gear

my book is not going to solve every aspect of every problem, but it will help with the big picture of what needs to be done

a0624z

Note from March 2014

I don't want to impose my past or present spiritual, religious, or mythological view points on anyone else.

I think folks are free to make up their own minds.

Note: this note is not meant to be included in the book, except perhaps for the paragraph about conjoined twins

(conjoined twins, memory, speculation about how the mind works & viewpoints on buddhist like spirituality)

////////////////////////////////////

Micah Blumberg

I'm very interested in brainwave entrainment, using tones, beats, and music to alter brainwaves and alter states of mind, accomplishing an inner expansion of spatial metaphors defining reality and being.

I don't think its a situation where one person has to be wrong in order for another person to be right. I'm sort of saying its like there is more than one valid point of view. I take the view that there is zero percent chance of spirituality, but that is the perspective I have to have forever. It doesn't make my view more right than your view, just different. There are perhaps no right views.

Chase

but anyway, since DNA is formed in various ways due to binding of compatible codon sequences; a process determined by hydrogen bonds/electronegativity reactions between combinations of nitrogen, oxygen, hydrogen, phosphorous, and carbon, which makes the formation of DNA sequences dependent on the electromagnetic gauge force. my theory is that the electromagnetic vibrational energy of 528 Hz simulates the formation of specific start codons with a corresponding resonate frequency which initiate DNA repair, or in other words the

vibration either "mimics" an information signal responsible for repair, or 528 Hz is the repair signal itself. my other theory is that the frequency 528 Hz stimulates the entire nucleotide system to induce codon pairing due to excitation of the molecules and that its symmetry in sacred geometrics and electromagnetic resonance with DNA structure corresponds to/activates the similarly symmetrical process of DNA repair.

Micah Blumberg

"i used to be the exact same" that's not true.

Micah Blumberg

you see it as a sequence, in the past your views were A, then you had some experiences, and your views became B. So you hear what I say and you think oh his views are like A, like the views I had before I had some experiences that changed my views to B, so obviously B is next for his views.

I'm saying it's not like a sequence. I never shared similar views to whatever was A for you. That A is nothing like, nothing similar to what I believe, the similarity is an illusion.

1 hr · Like

Chase

no man i see it as a superposition of infinite possibility, regardless of my thought "sequence" your current thought will be ?? while your later beliefs will still be ??.

Chase

i am simply saying that data can be communicated by trying to place a value on an uncertainty variable in order to relate it to prior knowledge and experience. otherwise there would be no point in human interaction if peoples thoughts and perspective couldn't be guesstimated and related to

1 hr · Like

Micah Blumberg

I have had more profound spiritual experiences than I can count. I've seen the very beginning of the cosmos, the big bang. I saw it, and it was amazing. I have visualized how the whole universe right now is a fractal adding up to the very beginning of space. Yet it is possible to understand that this is not spirituality.

It's my premise, as the guardian of something, to protect the sacred truths in the capability of a physical mind against the tyrannical delusion of spirituality that pervades so many realms.

There are many levels of delusion, and spirituality is one of them. You can go back and forth for a long time, from A to B, from B to A, and back again, until you find out what it is that you are here to protect. Which perspective you are here to be a guardian for. That's what I came to share.

1 hr · Like · 1

Chase

my spiritual experiences have taught me of the illusions of reality as well. but they have also taught me to control and dictate the direction of my life through spiritual techniques. spirituality may be nothing more than a manifestation of my mind and the unique factors i associate with it. why should that mean that it's not real

1 hr · Like

Micah Blumberg I've used very precise tools for cutting through delusion. The five ranks of tozan, big mind, big heart, great doubt, great fear, great hopelessness, great freedom, great joy. Great doubt is one such tool that you take on, like a mask, a character, and a voice, you become it, you doubt everything, everything becomes another delusion to cut away, even the deepest most profound spiritual experiences become another delusion to root out, and cut down. Cut it down, cut down the false tree called spirituality.

1 hr · Like

Chase

i agree root out the delusions. but real spirituality is rare, it is true enlightenment, self actualization, and the very essence of it burns all illusion away and there is only what is and what is is everything

1 hr · Like

Chase

it is all about belief, for your beliefs, your vibrations, thoughts, are what shape your reality around you

Micah Blumberg

"it is all about belief" no it's not, in this statement you are, how do I explain this, sort of like seeking the causes, it's what a brain does, pieces of memory chain together to predict the causes, any and all causes. so in saying it's all about belief it's like looking for causality, and in the same context looking for causality as the solution for something, solution seeking, or just plain seeking is the way, but the solution is not that, throw away the solutions.

The way to find the path is through seeking, but the seeker can't be satisfied because its job is to seek. Yet without the seeker we are each lost. As the way you are already everywhere, and you have no where to go, and nothing to do, no need for beliefs at all. Truly nothing matters because all is innately well. No need for agreement. Spirituality is a very tough and nasty root, so dig hard against it in your mind, because it stands between some seeker and their enlightened path, the thirst of which must never be quenched.

54 mins · Like

Chase

you make good points, but i believe spirituality is to have a belief that is not just an ideal, it is a part of you and a person like this is never disappointed for they have no need to seek for

everything is already found before it was even lost, and the person is then free for they do not need to seek, only shift their perspective as to lens out information from the super matrix and then connect and relate the information in new ways

Chase

this is an extremely contrary subject, as there are as many different opinions as there are people and then some. as you stated, i will never be able to make(show) you experience my experiences exactly. however ive actually been doing some research into possible ways of transferring experience thought perspective and emotion with the aid of bci tech

43 mins · Like

Micah Blumberg

There are conjoined twins who can see through each others eyes at will. One girl can know for example which color crayon you are holding up for the other girl to see. With technology one day we will be able to link together human brains to see through they eyes of other people. This however is missing the real picture of what is going on.

"An inter-thalamic bridge is something else altogether from what you're describing."

<https://twitter.com/Rares82/status/1525423230001025025?s=20&t=Mj56DIpxId53gmfLLdNYVw>

No one can experience your experiences, and you can't experience your experiences (wait what? I don't agree with this statement in 2022 but it was used in 2014 to argue an interesting point or perspective on what the brain is doing.)

What's happening is that pieces of memory are linking together first and last time each time a person has any kind of experience. A memory of a previous experience is actually a new thing, only existing for a matter of milliseconds.

There is no transferring of memories or experiences that can be possible because there are no memories or experiences inside a person's brain. There exists only the probable likelihoods of certain memories or ideas or experiences that could be activated as something new that feels old.

19 mins · Like

Micah Blumberg

"my experiences" another deep root, another delusion waiting to be cut down, another false Buddha standing in the way of the enlightened path.

14 mins · Like

Chase

so you don't see spirituality as the process that cuts down the delusions that stand in the way of enlightenment

12 mins · Like

Micah Blumberg

spirituality is nothing except another delusion to be cut away

"my experiences", my memories, transferable perspectives, and spirituality are all delusions to be scrapped, and chunked.

they are like temporal constructs, ghosts, probabilities that existed for milliseconds never to exist again, let them go, and they can return, but they are not real, delusions

thought is delusion, all of it, it's the nature of a temporal consciousness, a system of delusional bets to coordinate movement

a0626z

(cascade cortex, field, perception, oscillat, graph, dendrite, electromagnetism, emotion, cereb, vector)

Fractal

(SAN)

A self aware network is in part a multiscale multitier graph of neural network oscillators, each instance of the repeating topological neural circuit firing pattern at multiple scales is making an analogy in a physical way, because the firing pattern is isomorphic at a different scale you can think of it like a vector based constellation

rendering

neurotype to find associations between unstructured datatypes

Grid like

<https://www.google.com/amp/s/phys.org/news/2005-09-deep-short-circuits-brains-grid.amp>

"psychiatry Giulio Tononi reports that the fading of consciousness during dreamless sleep seems to occur as the different regions of the cerebral cortex that mediate perception, thought and action become functionally disconnected.

I'm visualizing oscillations as frames of consciousness, the

parallel connectivities emerging between different areas of the brain that are rendering functionally or tempo-spatially & fractally isomorphic frequency patterns at multiple scales giving a cross grid (analogizing) parallelization of large scale pattern analogies across multiple sensory modalities ironically one must describe this very concept at least twice in order to cogitate a visualization of it.

but the purpose of being able to relate functional isomorphisms at different scales allows to brain to compare patterns with scale invariant learning.

so we can imagine that a small cube and a big cube are both a cube in terms of the shape of the cube being its spatial fractal (repeating) voxel-like (scale invariant) virtual (a location invariant pattern (oscillators learn it so any group of neurons can play it back), and a time invariant pattern (and I tell you brother the same thing happened last month and the month before that)

the playback of patterns corresponding to the world we causes pattern interlacing that we can feel in the macroscopic sense as changes in the macroscale electric field and magnetic field distribution.

What if the highscale fractal representation of a small scale pattern the process of attention in neural correlates, because if you can imagine a camera lense has small scale pattern representation and large scale pattern representation depending on your vantage point, so that makes the entire brain into a fractal of your eyeball because the eyeball also has a small scale pattern reflected on the lens and then its image is collected & represented on the inside of the spherical eyeball by the cells in the retina so that is an image fractal in the eye, then the oscillating group of neurons is an eye to watch neural circuit patterns a higher phasic gamma frequency rates get fired off, but the dendrite is the eye of the neuron and the neurons at the dendrite level are learning pattern sequences that are replayed at the neural circuit scale for the neural oscillating group to capture, and then the

are typical neuronal firing rates, including either or both the slower (higher amplitude more social) tonic oscillatory firing rates or the faster higher frequency (lower amplitude less social)

In a grander sense the self is not anyone, and there is no one really here, just the drawing of a person reflected by and observed with an organic brain that is reverberating with oscillatory patterns, in magnetic and electric waves.

Its nice to have had this connection with you, considering that we don't really exist, it was pretty nice.

Phi from Integrated Information theory instead of being about whether consciousness is present it might be a way to compare the resolution capacity of consciousness between two brains.

Predictions are quantified at multiple scales and drive our choices (game theory)
knowledge of history (memory of the past) gives us some flexibility in our decision making

It seems that magnetism, changes in the brains magnetic, would be generating by correlating patterns, or temporally, spatially, and perhaps frequency correlated patterns. This would also be something that a brain could detect, it might be vague like a feeling. I'm suggesting that feelings and emotions may be electromagnetic moments. The electric dipole activity and the magnetic

dipole activities might also be detected and correlated by the human brain. I want to imagine that there could be a significant distinction between two types of feelings, the electric dipole generated feelings and the magnetic dipole generated feelings but I am not sure, I guess it is possible that the brain could construct feelings from both.

Neuroplasticity is part real and part myth. It is real that brains can learn new life skills after reaching an old age, and it's true that brains can recover after serious brain injuries or diseases, but it's a myth that this is largely because of neurogenesis or new neurons being grown in your brain, as the amount of new neurogenesis happening in the brain is too small of a quantity and it's happening at too slow of a rate to be responsible for new learning, the real reason neuroplasticity is real is because your brain acts like a network that can self regulate and re-route its own activities, and your brain can learn new skills if challenged (referring to rehabilitation techniques) in the right ways. Examples would be improving skills with the broken but healed arm by restricting the good arm's movement. Neuroplasticity techniques work but for different reasons than researchers had supposed in some instances. While a new neuron, emerging from neurogenesis could learn new things, so can old neurons, old neurons can learn new things and some old neurons are meant to last a lifetime.

a self

death star robot

https://mwi.usma.edu/swarms-mass-destruction-case-declaring-armed-fully-autonomous-drone-swarms-wmd/?fbclid=IwAR2e3UBIXwAgF1hE6Lo3IfBBUAoifm_BXNcwsgCDsBZm5nop1WHmlOPrTjl

Imagine the headline Congress to ban all mergers and acquisitions follow Facebook going offline for 7 hours yesterday, because it turns out mergers and acquisitions are just get rich quick schemes devised for people who are already rich to get richer. At the same time Congress passes a second law that forces all companies to split off into multiple pieces so that there are no longer any companies that have an income greater than any other company. This is about multiple redundancy systems to protect people.

Illustration idea: When the gap between what you are thinking and what everyone else in the world seems to be thinking keeps growing. Where is this going??

What if the Quantum Double slit experiment is like the reflection in water that changes based on observation because as a reflection it is reflecting events that exist in the 4th dimension converged to a focal point whereas classical entities have a scale that reflects a divergence of the spacetime focus point or it's a view that is stretched out so that the temporal cascade of events maybe not be immediately apparent.

Just as time moves more slowly in Earth's upper atmosphere versus on earth on the crust, it could be that at the quantum scale time moves very fast,

that kinda suggests that the quantum realm is like a reflections of a liquid

it begs the question

what if the transistors in your computer could listen and consider the data they are receiving, over time learn to recognize patterns, form their own opinions, and ineffect decide for themselves when they wanted to transmit information (speak)?

<https://twitter.com/adarosecannon/status/1434922060011221003?s=21>

Everything in the cosmos is made from the material of electromagnetism, including every aspect of the human body, brain, including the mind.

I argue for a 100 percent materialistic universe with a 100 percent materialistic mind. And if people want to use words like spiritual or soul to describe energy patterns, frequency patterns, electromagnetism, or brain activity that's fine with me as long as they are not trying to act like human consciousness is not physical, it is physical. There is nothing that is not physical, even what people describe as spiritual patterns are actually physical patterns.

Well one can argue that information is substrate invariant, meaning that you could inscribe the same idea in a rock, in a brain, or write it on a piece of paper. The information has to be embedded in the material so it is in the material but not of the material.

I am not my brain but just a pattern that is generated by the brain & bodies interaction with the ecosystem

a0626z

consciousness is from a specific frequency range of phase rate sensor/transmitters (nerve cells) that jointly detect & reconstruct tempo spatial information

the synthesis of information by nerve cells is the mechanical process of consideration, observation becomes consideration through multiple steps, consisting of multiple arrays, each with many thresholds for the consideration of novel criteria, and the synchronicity of common detections at a higher levels (higher thresholds) gives rise to entification, or the attention binding of knowledge, what Anil Seth calls hallucination, and what Daniel Dennet calls illusion.

a0627z

(hippocampus, thalamus, oscillat, dendrite, cortex, layers) life to be alive is to oscillate,

life oscillates, its a dissipative system

how the universe is a fractal

quantum physics

but life is a fractal body of cooperative oscillations that have what I will call expert memory structures inside a globally aware self-aware network

Orch Or

Electricity

Ions

Neurotransmitters

Dendrites

Neurons

Layers of cortex & functional layers

Neural Circuits

Microcolumns

Cortical Columns

Power Bands

Dipoles

Suprachiasmatic Nucleus

Thalamic Nuclei

Thalamic Bridges

Hypothalamus

Hippocampus

Auditory pathway from ears to the auditory cortex through thalamic nuclei

Visual Pathway throughout the brain

Somatosensory cortex pathway from the mechano receptors.

how the hand eye and ear are similar

how all feelings senses modalities are at least four dimensional

the 3D neural network from the perspective of any cortical column, it doesn't know its position in space relative to other neurons, it just functions as a kind of sensor with a transmitter, a clock and a memory that can sync with other clocks.

a0628z

We are physical systems that physically reorganize our own choice making mechanisms to make complex selections based on computed and predicted outcomes.

Consciousness is a temporally active loop of human computed stories & graphical renderings & audio sensory mechanical synthesis of patterns.

That's it, that's the solution to the hard problem of consciousness.

perhaps the morphology of the spine and dendrite encodes a memory in the topography or shape of the neuron, setting its shape as its voltage or waveform, the amplitude of its wave form or volume of its learned pattern, that changes long term with long term memory changes, its shape changes, because of new protein synthesis for growth in certain areas that are stimulated

phong

That there is a plausible scenario in which the human brain has learned to render and imagine volumetric images from any angle like GP3

a0629z

the Nexus of self is an oscillation pattern that is made out of pieces & parts from everything you ever learned, an amalgamation of everything you ever learned

This story about the changing levels of dopamine in the synaptic cleft surprised researchers but it validates my hypothesis about MVR multi-vesicle release

<https://www.quantamagazine.org/brain-chemical-helps-signal-to-neurons-when-to-start-a-movement-20220322/>

a0630z

(cortex, map)

Peter

How do you explain the differences between types? Does it have to do with long distance connections in/to the brain? (i.e. more connections in between regions and perhaps more connections from the body to the brain (causes a higher awareness of what the body feels which causes someone to be a Feeler.)) Just some of my undeveloped theories. MBTI and cognitive functions are super interesting.

17 hours ago · Unlike · 1

Dario

I'm not a neurologist and won't speculate about the bio-neural cause of the differences. In the EEG lab, for each person, some regions are much more active than others over the course of many tasks over several hours. There are also whole-brain patterns, circuit patterns, and so forth. One of the whole-brain patterns is when all regions of the neocortex are dominated by yellow-band brain waves, which heightens the neocortex's link to the limbic system and body (and is associated with Sensing, not Feeling). Conversely, another pattern is when all regions are dominated by green-band brain waves, which blocks up-flowing inputs from the limbic system (and is associated with Thinking preference). That's just the start. I really prefer to focus on the data rather than speculate at this point.

Micah Blumberg

Neuroscientists have used micro-electrodes to map the areas of the brain that correspond to the hand and face for example, if someone (more commonly a blind person) learns something like "braille" the amount of brain region (neurons) dedicated to that finger map will be vastly increased, having a bigger map of the finger might be analogous to having a personality type that is more feeler. The brain is continually shaped by the important life experiences, and the life experiences that dominant our sensory awareness over time. Cab drivers, after 20 years, for example have a brain that is significantly larger than the average population in the regions that are most related to their work as cab drivers. This might have an effect in terms of changing their MBTI over a long period of time.

2 minutes ago · Like

Tags:

killed

a0631z

(neuron)

Real time natural back propogation.

The brain has excitatory neurons, inhibitory interneurons, and it has disinhibition factor where an inhibitory neuron will suppress a downstream target that results in a 3rd party neuron becoming activated more quickly.

Interneurons via inhibition introduce non-linearity in cortical circuits (via Rhythms of the Brain)

This non-linear "hard to predict activation sequences" process is missing from the typical convolutional neural networks for example.

but the main point that I see is that an inhibitory process allows a much larger number of firing patterns to exist in a neural network, compared to a neural network with the same number of parameters that does not have an inhibitory system for non-linear pattern generation.

"State" a concept in computer programming, is a concept that might refer to a moment when a program has responded to a users interaction, and has changed from its initial condition in someway, that new state means that the program has changed and therefore it might respond in a new or different way to the next user interaction for example. A computer program is a sequence of steps that the computer executes, the steps in that sequence are programmed by the programmer. What is interesting is that in the brain there is also a state, which means that 'the same neural network can produce different patterns at different times depending on the state of inhibition' to paraphrase Rhythms of the Brain.

Excitation is like a runaway train, and the inhibitory interneuron system is like switches on the train tracks. It causes sometimes novel results.

Real time natural back propogation.

Inhibitory neurons can be considered as a kind of natural back-propogation system, if you imagine your brain is looking for a lot of features, like eyes, ears, fur, sounds, and movement in order to identify a particular animal, and if the animal is missing an eyes, or does not have cat like ears then an inhibitory network might cancel out the activation of a feature that represents a cat's ear. If you are expecting a cat's ear, and its not there, you don't want your brain to generate the image of a cats ear where there is none. In that sense an inhibitory system is going to be more able to correct the representation of what is there in reality, its going to correct features, and so its like a real time back propogation feature.

a0632z

Note from: Apr 19, 2012

Comment on the note: What I think I was missing at this point in time (2012) was the part about how a memory-prediction was actually a rendering that a subsequent array or layer of nerve cells would read & interpret.

(perception, layers, emotion, memory-prediction, cortex, map, neuron)

////////////////////

<http://www.news24.com/MyNews24/Quantum-Physics-and-Consciousness-20120418>

Quantum Physics and Consciousness

www.news24.com

A few weeks ago popular science news outlets ran a story about scientists claiming to crack the "brain memory code".

Micah Blumberg

When the map of reality expands even more so that becomes apparent yes! It is not this or that until it is, thats quantum superposition.

Micah Blumberg Our perception is a prediction, a complex network of associated predictions based on life experience. Predictions are a response, they manifest as thoughts (beliefs) they can be visual predictions or audio predictions or in an sensory modality! Using the term Prediction unites the "our perception" concept in which perception is like a gift, with the "conditioned by our present relationship" in which conditioning is the problem, and it creates a third alternative. We are neither perceiving nor being conditioned, we are neither receiving nor being punished, instead what's happening is one simple process, prediction, in the beginning the predictions are immature, and then in a long enough time line, provided the brain is healthy, and other conditions ideal (constant), then wisdom is the inevitable result. Wisdom being a more developed expectation, or a better map of associations in the network of predictions constituting some measurable improvement in some programmed process of movement toward hearts desire.

Micah Blumberg

There is no such thing as direct experience. All experiences are predictions. All thoughts are predictions. All beliefs are predictions. Emotion is a feeling based on predictions. Direct Experience is a myth, something Buddha and Krishna talk about, but it's not real, there is no such thing.

Micah Blumberg

Rebecca, if I may recommend a book that would perhaps be of some value to you, it's "On Intelligence by Jeff Hawkins"

Micah Blumberg

I run a neurofeedback salon, nice to meet you. What do you farm?

Micah Blumberg

I think thinking of the word prediction as something similar to the word prejudice might be misleading you, it's more like memory-prediction, the mind interacts with life, and through life experience we develop a memory-prediction, a prediction based on what we experienced, that pretty much defines all the data in the mind as far as we know. Every thing we think we see out there is a memory-prediction, it's many layers of meaning constructed via associations learned over time, even when you think you are having this so-called "direct experience" you are really doing the same memory-prediction process that your brain always does, automatically, based on the physics of your brain's structure, and the ecosystem of life where your brain resides.

Micah Blumberg

right so as you sense something, an electric pattern is traveling up the neo cortex, and the statistically novel parts leave a bigger impact, so your memory-prediction is the learn response to that sensory-electrical impact, it's the tissue attempting to be ready for that impact the next time it comes, that's how memory-prediction works on the small scale. Maybe your doing as many as 5 quintillion memory-predictions a second, that's my guess.

Micah Blumberg

It's not a personal interpretation, it's based on a deep study of the whole field of modern neuroscience and cognitive science. Conclusions from scientific studies, applied in real life, in software, to solve problems using data from this research. We now have software and machines that think the way human beings think, using the memory-prediction formula. So this is far from just my perspective. www.numenta.com

Numenta

www.numenta.com

Mobile computing pioneers Jeff Hawkins and Donna Dubinsky founded Numenta to dev...

Micah Blumberg

As far as your question: "is there being in you that watches the mind?" Each neuron vibrates, like a musical instrument, and I have perhaps 84 billion of them (a recent number not everyone agrees with) together the instruments sing, and the song they sing is "I am" and am I this song? Am I this internal narrative? Is this my soul that is sung by the symphony of 84 billion musical instruments? Perhaps. Perhaps I am this song in my head that says "I am"

Micah Blumberg

The song plays everywhere, and all the 84 billion instruments that play this song are listening. They listen and play, play and listen, it's a loop. Being is a learning loop, like a feedback loop that learns, or a video loop, ever pointed a video camera connected to a monitor at the monitor that has the feed from the video? Get it?

Micah Blumberg

Have you ever looked between two mirror that were facing each other and seen into infinity?

That's a kind of feedback loop!

What makes the neutron vibrate? gravity

Who listens to the song and understands the meaning? the song is a loop, the neurons that play it also listen to it

Does the software that can think like a human being, have being? you predict that you are a being, but that is a prediction

What is being then? a prediction of being, an association with some "self" that is like the nave of a wheel, the spokes of which are all the many views of your life and the world and every other view too...

Micah Blumberg

Is "to think" the same as "to be"? a thought is a prediction, and if you are think you are a being, that is another prediction also!

6 hours ago · Like

Micah Blumberg It's not only a prediction, it's a prediction based on both life experiences and the physical structure of your mind

Micah Blumberg I can recommend books, articles, but you don't have TIME to read. Well I don't have all day to educate someone on faceobok on the last century of neuroscience. Even if I did do that you have to at some point figure stuff out on your own. I can't figure everything out for you. The information I have provided should be more than enough to figure out your own questions.

Micah Blumberg Your being is an illusion R., when you study more neuroscience the evidence shows you this, it's obvious, maybe you think it's an article of faith but it's not. It's obvious once you see the medical data and scientific facts. If you cut the brain in half, suddenly you apparently have now two independent beings. Maybe your thinking where did my second soul come from? http://www.ted.com/talks/steven_pinker_chalks_it_up_to_the_blank_slate.html

"One of the most dramatic demonstrations of the illusion of the unified self comes from the neuroscientists Michael Gazzaniga and Roger Sperry, who showed that when surgeons cut the corpus callosum joining the cerebral hemispheres, they literally cut the self in two, and each hemisphere can exercise free will without the other one's advice or consent.

Even more disconcertingly, the left hemisphere constantly weaves a coherent but false account of the behavior chosen without its knowledge by the right. For example, if an experimenter flashes the command "WALK" to the right hemisphere (by keeping it in the part of the visual field that only the right hemisphere can see), the person will comply with the request and begin to walk out of the room.

But when the person (specifically, the person's left hemisphere) is asked why he just got up, he will say, in all sincerity, "To get a Coke"—rather than "I don't really know" or "The urge just came over me" or "You've been testing me for years since I had the surgery, and sometimes you get me to do things but I don't know exactly what you asked me to do."

Similarly, if the patient's left hemisphere is shown a chicken and his right hemisphere is shown a snowfall, and both hemispheres have to select a picture that goes with what they see (each using a different hand), the left hemisphere picks a claw (correctly) and the right picks a shovel (also correctly). But when the left hemisphere is asked why the whole person made those choices, it blithely says "Oh, that's simple. The chicken claw goes with the chicken, and you need a shovel to clean out the chicken shed."

The spooky part is that we have no reason to think that the baloney-generator in the patient's left hemisphere is behaving any differently from ours as we make sense of the inclinations emanating from the rest of our brains. The conscious mind — the self or soul — is a spin doctor, not the commander in chief."

<http://www.mercenarytrader.com/2012/04/whos-driving-the-bus-reflections-on-cognitive-bias/>

Steven Pinker chalks it up to the blank slate | Video on
TED Talks Steven Pinker's book The Blank Slate argues that all humans are born w...

Micah Blumberg
a prediction about self, a prediction about what's there
Educate yourself, or meditate for the understanding to develop from within, you ask me
conscious 101 questions. but I'm in conscious 303 class. You got to catch up on your own time.

a0633z

Note created Sept 2011

(procyon)

What is this brain enhancing technology called "Brainwave Entrainment". You can use it while meditating, to know your inner dragon with a new level of intimacy. Brainwave entrainment sends an audio or visual puzzle to the brain to give it workout. It does this with specially engineered frequencies. At first the brain actually can't figure it out. So it just keeps on working harder and harder and harder and harder. The person's brain will eventually figure it out, and then it's no longer a puzzle, just an old game. In the process however the persons awareness expands more, and that can translate to big realizations in a person's life. There are 12 levels to some programs, some programs only have sound, others have light as well, others don't have levels you just do the session that puts you in the perfect brainwave for the activity your about to begin, whether that's learning, composing, creating, running, sleeping, machines like the procyon even have settings for hallucination experiences, through light and sound no less.

a0634z

Note from August 2011

(procyon)

Real cutting edge engineers, creators, and innovators are testing out stuff all the time, and building new stuff.

I've got some inside contacts, that shared a few awesome details with me. One exciting new discovery that's being tested is this 99 dollar medical grade eeg Neurofeedback device that when combined with this awesome software from another company produces an amazing result that is just very impressive according to people behind the scenes. If you search either of these companies you will find very little mention of this, because it's not publicly released info yet.

I found out about it because I was asking the people I know about this <http://brainstatetech.com/> which is like 2000 dollars for the whole treatment program which is ten sessions an hour and a half each. The results they promise sound like miracles, so I was asking people I trusted if it could be legit.

"Chuck Davis' original Roshi, as well as the Brainmaster Atlantis, can drive the lights in glasses directly by the EEG signal, and Chuck has made similar claims--sounds like this is the same process only using sound instead of light. Sound tends to be less effective than flickering light for brain activation, as more of the brain is connected to the eyes (40%) than ears (ca. 15%)."

I realized this applies to holosync as well, if holosync is only sound, then it's only going to be able to activate 15 percent of the brain. Light based brain entrainment is going to activate 40 percent of brain. So if you have a Procyon mind machine like the one I use regularly your going to develop deeper and faster 40 percent + 15 percent of your brain is 55 percent. No wonder I went through all 12 levels of holosync in 4 years while using the Procyon on the side. Much more of my brain was being stimulated than the average holosync user gets.

So audio based neurofeedback is never going to come close to visual feedback.

But this question wasn't about brainwave entrainment, it was about the transformative effect of Neurofeedback that you can do in your own home for less than 300 dollars, as many times as you want, unlimited treatments.

Some say that holosync is the poor man's biofeedback. Yes it helps you focus so you can increase your awareness, but the bio feedback is your own senses, your own wits, with

neurofeedback your brain is going to be able to become aware of it's own patterns in an accelerated rate that will leave holosync in the dust.

Just compare the websites and iphone applications and products that these other guys are building, and they are sharing with other companies, because they are real engineers, not fat cats like Bill Harris who spend their time bragging about how they got out of a lawsuit with an unnamed company (probably hemisync who apparently claimed that Bill stole the technology that creates the audio and rebranding it.) Their websites are the real cutting edge, their products are getting

<http://www.neurosky.com/>

<http://www.transparentcorp.com/products/mindws/>

<http://www.mindplace.com/>

These companies are first class, holosync yeah right.

The software my inside contact mentioned was MindWorkstation and the Neurofeedback device called Neurosky, the rumor is Neurosky is truly medical grade EEG like they say, but it's super cheap like 99 dollars, this kind of thing used to cost 3500 dollars, and it still does cost like 1500 at some companies, and Mind Workstation is incredible software that takes that EEG data and makes these 3d graphs, with light and sound feedback.

It's also rumored that mindplace is going to create a new LS machine (LS = Light and Sound Machine) that is designed from the ground up to work with software like MindWorkstation and Neuroprogrammer which is also sold at Transparentcorp see link above.

The guy who sent this secret info, apparently they are building a new light and sound machine that will work really well with the Neuroprogrammer stuff, even though these three companies together are totally separate. The neuroprogrammer people are building new software to work with more biofeedback and neurofeedback machines, and new software to work with LS machines. These people are the cool people, they are working together for fun even though they are in separate companies, their engineering geeks, the real heroes, inventing new stuff all the time.

They are not wasting their cash on support teams that will explain why it's taking ten years to get the results they promise, that conceivable you could get a lot sooner with better technology that stimulates more areas of the brain at once and gives you better feedback to increase your minds awareness of itself even faster. They are not paying support staff to censor and delete messages that will benefit you as well as other companies, they are not in competition to dominate and destroy other business's.

a0635z

Note created Jan 2014

(procyon)

Transcranial Direct Current Stimulation

<http://www.foc.us/>

\$250 is the total cost of ownership, and you can use the machine without that headset pictured, you can do experiments with it.

deep brain stimulation, with actual brain surgery

"In this talk, Prof. Bill Newsome of Stanford Neurosciences Institute discusses neuroscience's implication in health, law, business and economics."

"Neuroscience for a New Age: How Brain Science Will Shape Our Future"

<http://t.co/BMzj9nPVYE>

you can imprecisely target the brain stem with Cranial Electrotherapy Stimulation or Alpha Stim
you feel a bit saucy, like you had a beer or a glass of wine or two <http://store.alpha-stim.com/>

Have you heard of mind workstation? <http://www.transparentcorp.com/>

Have you heard of mindspa?

<http://avstim.com/>

heard of procyon?

<http://www.mindplace.com/Mindplace-Procyon-System-Meditation-Machine/dp/B000X2BSJM>

a0636z

i am a wave of phase shifts

a game engine in particular creates a 3D environment with a coordinate system

but your brain's 3D architecture has a built-in 3D coordinate system, because its 3D grid of cells that are spatially aware of their surroundings, and because the neurons/cells are aware of what's around them

Neurons are effectively knowing their own territory, growing receptors towards nearby cells that are more active (to siphon energy via receptors) and atrophying receptors away from cells that are firing in opposite polarity (splay state). The process of growing receptors towards signal sources that are closer to being in sync with one another is called LTP, and atrophying connections to cells firing in polar opposite firing is called LTD.

Ways in which cells feel their surroundings

<https://www.sciencedaily.com/releases/2017/07/170718084522.htm>

Cells sense their environment to explore it

<https://www.sciencedaily.com/releases/2017/12/171213125821.htm>

//

Note originally created April 2018 and it represents the beginning of the effort at Noisebridge, that led to the project that brought EEG into WebVR on Oculus Go & Lenovo Mirage Solo VR headsets. The Neurohaxor project.

The note became a post on social media initiating the series of events that followed:

BCI + AI/DL + XR

Computational Biology and the future of brain machine interfaces with deep learning AI, virtual reality, and augmented reality: Presentations, Collaborations, Discussion, and Workshop

Do you think anyone would be interested in meeting on a warm Sunday afternoon at Dolores Park between 1 and 3 just to talk about neuroscience, bci and the latest news? I hope we have many warm Sunday's this summer.

After 3pm we can walk as a group to Noisebridge in the Mission which is only a few blocks away and use the wifi and electricity there to keep working, or at that point the group can separate.

Brought to you by two groups:

1. San Francisco Virtual Reality
- and
2. NeurotechSF

SF VR + NeurotechSF: BCI + XR (VR+AR) + AI/DL: Lets Meet Share Present & Build

This meetup designed to unite the Brain Machine Interface Neuro Hacking community with Augmented Reality and Virtual Reality developers, and Machine Learning Deep Learning developers as well as people working in Theoretical Neuroscience and on Computational Biology.

My name is Micah Blumberg, I'm the organizer of this meetup and I also represent, as an Ambassadors, a developer called the Vision Agency that makes MicrodoseVR at MicrodoseVR.com and our team has already built an application that uses the Muse EEG faceplate for HTC Vive to track your heart beat and make the graphics in the VR app pulse with the beat of your heart, however that is a completely separate project from this and my goal is serve the community of Neuro-hackers like ourselves by creating open source tools that we can all use and share and work on together. I would like us to feel inspired by the Vision Agencies work to combine BCI with VR, but that's all. I also founded the Self Aware Networks group on facebook, I admin 30 groups, I do the Neural Lace Podcast and Silicon Valley Global News a short bio is at <http://vrma.io>

Let the organizer know if you would like to present (in the meetup) your start up, or project, or corporate agenda, we want people to be able to share what they are working on, invite others to collaborate, we have a slack channel and a discord channel and several facebok groups.

Feel free to share information about yourself, your company or team, your project, and or what you are working on as long as its closely related to the above mentioned topics.

Link to join our slack

<http://neurotechx.herokuapp.com>

Make sure to join the SF channel: #_san-francisco

We also have a Discord group how which you can join by visiting

<http://www.neurohaxor.com>

Groups on related topics such as Neural Lace:

Self Aware Networks: Computational Biology: Neural Lace

<https://www.selfawarenetworks.com>

Neurophysics+

<https://www.facebok.com/groups/IFLNeuro/>

NeurotechSF

<https://www.facebok.com/groups/neurosfi/>

Neurohaxor

<https://www.facebok.com/groups/neurohaxor/>

The goal is to meet monthly, and eventually more often.

This is a meeting for people who work on or want to collaborate on projects that involve brain machine interfaces (BCI), virtual reality + augmented reality (XR), artificial intelligence meaning deep learning neural networks, or who want to work in or collaborate in fields related to neuroscience, computational biology, computational neuroscience, and closely related topics.

By intention our group is intended to be like a workshop of collaborating people, our main communication channel for collaborating on the project to combine BCI with XR and AI/DL has members but very little communication activity. This indicates to me that we are still in need of a project that the group can get behind and work together on. So it seems that the logical reason to meet therefore should be shifted to a discussion of recent news related to Scientific Papers, and or Technology News related to BCI, Computational Biology, Microbiology, Computational Neuroscience, Deep Learning AI, and possibly the convergence of other topics with the aforementioned.

Yet our goal is not to be a discussion group in the long run, but instead to be a workshop, where people can collaborate together on actual projects related to BCI, XR and AI/DL. So please read up on the latest Computational Biology Papers, or papers and news on similar topics and come prepared to discuss. Share papers or news articles in any of the groups or channels above so you can prepare others in the group to be ready to discuss what you want to talk about as well.

Neuro Hackers as well as Science & Technology enthusiast, Neuroscientists, Neuroscience Enthusiasts, to work together to adapt Brain Computer Interfaces to fit Virtual Reality Headsets and incorporate Artificial Neural Networks for interpreting and visualizing the sensor data.

We are open to presentations from the members, project proposals, plans, pitches etc.

Goal #1 Adapt BCI hardware to fit an XR headset. (XR refers to Augmented Reality and or Virtual Reality)

The first chapter of this project is about adapting the BCI sensor kit to fit an XR headset, similar to how Neurale EEG Headset was built to fit the HTC Vive.

Goal #2: Create open source 3D printable hardware for attaching BCI sensors to XR headsets, and open source BCI plugins for Unity and Unreal Engine.

This will allow us to have the flexibility to integrate different sensor systems as they become available and it will serve the greater good.

We need 3D models of the various AR VR headsets that have accurate dimensions that we can use to build 3D printable parts that will allow us to attach sensors to those headsets. Please let us know if you can contribute to the effort to acquire measurement accurate 3D models that we can modify and 3D Print.

We are still trying to acquire SDK's for BCI to be used in Unreal Engine and Unity.

Bring your laptop for notes or for sharing examples of your work or for giving presentations, you can take photos, bring your AR VR BCI AI demo if you wish, bring pens, bring notebooks. You may bring snacks or drinks for yourself.

a0637z

Humanity might be absorbing electrons from high frequency signals, and emitting low frequency tonic signals that either calm or excite the environment at the quantum scale

thats why we have an observer effect or measurement

our delta wave, theta wave, alpha, beta, low gamma emissions are programming the universe that we observe to be more excited or less depending on the oscillatory state of that which is being observed.

a0638z

Each synaptic connection is like a learned flash flood drainage path. The synaptic connections are attractors for certain types of patterns, like your thought strategies.

but its like a new flood of signals come in, and they create changes that layer on top of the existing network of learned patterns to branch into new pattern variations on previously learned patterns

I subscribe to the idea that each part of the brain specializes in distorting the global brain pattern in a specialized way. Like part of your brain really gets active for polished wood, or for looking at rain on a window sill from inside a dry house

the cells maintain their firing rate as a phase difference to the delta oscillation, but many points in that wave oscillation are changed simultaneously as a sort of sparse and distributed phase change across the wave reflecting a specific set of neurons that had become inhibited following another neurons excitation. So the negative imprint of a fired cell leaves its own imprint in the theta brainwave pattern as a tiny phase change with a sparse & distributed representation, that essentially creates the engram of a hot phasic neural firing pattern which is the ecphory or the pattern that is in life memory, and the inhibited pattern that is transfered from its signal input to later areas in the brain is perhaps reduced to frequency patterns in the oscillating power bands.

This book I am writing keeps growing! I thought I didn't need anything else but I can see the mind and the universe as numbers, or as a number.

a0640z

Mesoscale to Macroscale: The Fractal of Isomorphic Functions: Hand, Eye, Neuron

Global Structure Macro to Micro

Fractal Global Structure

* fractals (princeton mri study, eeg, meg, cavities (skull, eyes, ear), sensory arrays (dendrites, circuits, columns, default networks, thalamic bridges, interneurons, corpus callosum, rich clubs, major brain network junctions.)

* fractals eeg

* fractals meg

* fractals mri

* fractals anatomy

* fractals functional anatomy

* I want to show how the collection of data in arrays is similar across the eyes, ears, tongue, touch, and smell, and how oscillations are arrays also.

* Neural communication modalities

a0641z

neuronal global resonance theory, like a pebble in a pond causing cascading ripples that magnify inscale as they ripple across the mind

if we put a sensor array on the brain we can learn all the brains patterns because all the patterns ripple everywhere,

uploading

self aware network to self aware network interfacing

but at the point they are arriving at our sensors they might be magnified a great deal, so it would be interesting to study the route of pattern dissipation or signal traffic

Quantum Gravity from Fick's First Law

The Diffusion atoms & particles in space

slowing closer to the center of mass in part because of a higher concentration of particle collisions

If you are moving fast through space
moves

the GPS satellites tick faster
by increasing density of particles

space closer to the center of mass is more excited, so the -

time moves more slowly if you are moving faster
but since gravity of a planet like earth has an equivalent effect to an elevator accelerating into space

time intervals are relatively decreased (time moves more slowly relative to an object in space) at the same time that the frequency of particle movement increases compared to an object in space

as you accelerate your particle frequency with high density mass, you experience time more slowly, creating a time/particle diffusion matrix or field.

The increased frequency of movement is like a runaway cascade increasing the chances that each particle moves toward that increased particle frequency because its like a new area opening up with each iteration.

at the particle scale (meaning the diffusion rate (or movement rate) of particles is decreasing towards the center of a dense mass) the density also means that the frequency of particle collisions is increased (frequency inverted to time or duration) the dilation of time in space means decreased time intervals and the

because you are accelerating faster closer to center
so time intervals are moving at a different rate based on the distance from the center

slow time at the center
fast frequency in high density
fast time in the sky, lower

on the part of you that is closer to the center of a larger mass like earth.

so I'm more likely to move towards earth because the time diffusion gradient means that particles closer to the center of mass like earth are accelerating relative to particles further away (such as satellites)

Objects with mass exert gravitational force on each other, but specifically gravity is like a wave of particle concentrations, where particles are moving faster in time, but their experience because they are accelerating is one where spacetime

I am thinking that the mass of space is equivalent but perhaps not equal to space bending, such that protons, neurons, and electrons oscillate as a group, but its as if their topological shape is warped space wave reproducing in intervals of time a three particle wave oscillations that we think of as an atom. At the same time its movement in space over time is the movement of a smaller wave through a larger wave, so what I am suggesting is that space as a whole is like a wave/particle in the sense that space and time are just different from a particle in terms of density, scale & distance between oscillations. All of space down to human cells consists of a fractal tree of functional isomorphic oscillations or dissipative systems, the universe has been described as a system of harmonic waves at the quantum scale, and we can sense vibrations, powerful resonations in part because our whole bodies are made of this sensitive material, but our bodies and minds

what if every particle in space is like a vortex in an ocean

and the vortex is what creates density also known as mass

but all of space is essential a wave pattern of waves at multiple scales and they have fallen into an organized pattern because of natural selection

chapter called multi modal networks and multi sensory

a0642z

Feb 26, 2012

(layers, cortex, neuron)

Micah Blumberg

how do you know he didn't think of anything because he was tired of thinking, why would his identity as cat have anything to do with the decision to not think?

oh yeah intelligence is cellular, thinking is prediction and prediction is a narrative that coordinates movement, so if it has a brain and it moves then it makes predictions about what is there and that is thinking, I recommend the book "on intelligence by jeff hawkins"

cats also are natural hunters, and that means they sit and listen, a lot, that's meditation (sitting & listening) so the average cat is far more likely than the average human to accidentally become an enlightened being.

Are you talking about instinctual reactions from the autonomic nervous system like pulling your hand away from a hot stove involuntarily before thinking about it just because it's hot?

Technically intelligence in the autonomic nervous system works the same way, it's just optimized differently because it's a smaller system that works without direct input from the brain, but it's technically the same kind of intelligence at work.

I think your entire mind is automatic. It's always sorting incoming sensory data into categories to discern paths to what the body wants. So stumbling across something you are looking for even without knowing where you are going is the sorting process. Your senses bring in data about the surroundings that creates a distinct impact in the neural categories (neurons) that your mind uses for sorting and making distinct predictions (neurons anticipating) about what is going to happen next and what is there now (neurons actually firing) resulting in a solution (prediction response) popping into your head that represents a sequence of neural patterns that have actually fired in your head, and the effect of a solution "that came out of nowhere" sensation happens because those same neurons that fired inhibit nearby neurons from also firing, resulting in answers that are surrounded by blank spots, women often think this is intuition and call it psychic power. The certain state of being ready to fire in the video game mirrors the certain state of neurons in anticipatory mode ready to fire in the brain. Literally if you do a warm up mentally or just by playing the game a little while, and then do a moment of deliberate relaxation so the fired neurons can reset, (like meditation Jedi master) you'll get your neurons into an anticipatory state, and be the better shooter for a time.

When a cat is on the hunt it is listening, meaning that the neurons closest to the sense organs are the most active. That's like when you are looking for the opponent in your crosshairs, knowing your opponent is right behind that wall, maybe not knowing exactly where, but being literally physically more ready to shoot. When you and the cat spot some novel sensory activity, that starts a chain reaction of neural firings traveling up the linked neurons in the neocortex into more categories (neurons) which represent more sorting. So if the mind sorted that you (or the cat) are "not looking at an interesting target" then that information is sent back down to the bottom to keep searching. If you (or the cat) notice an actual target that is interesting, like the rival player you are about to take down (or a bug), then the neurons light up like a Christmas tree all the way to the very high fifth layer of the neo cortex where most motor controls are. (Grey matter) Neurons there send signals down through (White matter) myelinated axons (your

highbandwidth fiber optics in a way) which activates proteins triggering muscle movement in a highly coordinated sequence, where you experience taking the shot (or the cat experiences launching its whole body at the target). Each time you do a headshot a bit of myelin (like wax or plaque) is added to that neuropathway, so that each successive time you do it in the future you get faster and better at headshots. After ten thousand hours of playing (or doing anything) so much myelin builds up over those repeatedly used neuron/axon paths that your brain processes the hunting and shooting 100 times faster than a newbie to the game.

a0643z

(twins) Conjoined Craniopagus Twins

Krista and Tatiana Hogan

Craniopagus: Overview and the implications of sharing a brain

<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.884.9718&rep=rep1&type=pdf>

Braingate

The point of bringing up the conjoined twins who could see through each other's eyes was to point out that their heads were connected at the point of the thalami which is where most of the incoming sensory data is routed before going to the neocortex, with the partial exception being Olfactory (smell) which in part the pre-frontal cortex first before connecting with the thalamus.

a0644z

Book Chapter Outline (optogenetics, cortex, synap, Graph, LTD, Perception, perceptron, oscillat, field, neuralink, dendrite, emotion, vector, fourier, qualia) Self Aware Networks

A real goal of this book is to highlight for you the excellent work that others have done to discover what human consciousness is.

I'm 41 years old and my journal into neuroscience began at the age of 16 when I took LSD "Lysergic acid diethylamide" during a class in highschool. At that point onward the "Doors of Perception" the name of a book by Aldous Huxley had been opened for me, and I had become a student of the mind, I became dedicated to understanding its every mystery. I think that human beings are still far from understanding every mystery of the human mind, but I think we have enough knowledge now to understand at both a high level and at a low level what consciousness is, how we can create artificial sentient human level machines, and how we can hack the human mind with nerve gear to both download what we are seeing and hearing but also we can begin to stimulate the human mind to create Augmented Reality and Virtual Reality experiences without glasses. The long term consequence of this could mean a merger between the medical system and the justice system, and a global government system that provides superior education to all of earth's citizens to help protect lifeforms and our collective habitat.

Chapter 1: History of the Perceptron and the introduction of the Metatron (a new artificial neuron).

My thesis that I am setting out to write is: Humanity has already done all the work needed to understand how phenomenological consciousness works, we just needed to connect the dots so that we all actually understood how it works.

The point of this book is to provide a hot take on science that has been available to all of us for years. The goal is to attempt some novel functional metaphors about what human thinking really is, how we might interface with it as computational system, and how we might create robots that are sentient & self aware just like animals & human beings.

About self

ethos

pathos

logos

chapter titles:

1. chapter: the eyes, ears, touch, taste, smell and other senses and how their signals travel into the brain

2. structure of the path of signals

3. character of the signals: motor & sensory distinctions

4. the thalamac bridges, and the corpus callosum at higher levels

"Thalamo-cortical interactions modeled by weakly connected oscillators: could the brain use FM radio principles?" <https://pubmed.ncbi.nlm.nih.gov/9886635/>

This is a book about how the human mind might work, how we might approach hacking the human mind, how we might make conscious sentient self aware machines with phenomenal conscious experience, and how we might connect that machine to the human brain.

Im digging through all the concepts I have learned, to share the best conceptual gems and to share my prediction for what human consciousness and self-awareness and epiphenomenological experience actually with a mechanical & computational analogy

Chapter: The Self in Self-Awareness? A concept? A direction? A driver? An orchestrator of a symphony?

Symphony of the Brain what year?

There in Rhythms of the Brain discussion of how inhibition can change the firing patterns of a neuron, and that really is the point at which a change in the experience or the canvas of consciousness happens, but eventually that change is overridden by the group oscillation pattern and so that change in phenomenological experience is overwritten, or in a sense reset so that the network can get ready to represent a different pattern for the next moment in time.

long range interneurons with myelinated axon c collaterals facilitate temporal synchrony of all terminals (Rhythms of the Brain) The critical role in these rare long-range neurons has to do with facilitating the timing of distantly operating oscillators and the timing of firing patterns of large numbers of neurons that are not locally connected to one another. So in essence if you what you are seeing, and hearing is coming from the same source, like a dog's bark coming from what looks like an animal to you, well recalling the image and sound of a dog barking means that there is some sort of long range coordination between your visual cortex and audio cortex that is raising the sound of the dog, and the sight of the dog in your memory at the same time, which would be temporal synchronicity, and what accomplishes that (the timing of an audio memory and a visual memory) is thought to be long-range interneurons. So it can be argued that your attention across multiple sensory modalities (sight, vision, touch) is coordinated by interneurons, they are doing the work of binding diverse sensory representations together, for your attention.

so imagine that the brains principle cells, excitatory cells are collectively creating a large marble block, and that the inhibitory neuron system is Michaelangelo carving that marble block into David.

what are neural state machines? neural network state machines?

More books to get:

Thinking by John Brockman

Your brain is a time machine

Livewired

Breath - James Nestor

The case against reality

Infinite Powers

What is real - this is a great one

Chapter: Primary sensory cortices

& Qualia for eyes, ears, smell, feelings, touch, taste, balance, emotional wellbeing, happiness, fear, pain, sadness

alzheimers, parkinsons, huntingtons

add, autism, schizophrenia

"evolution" entered this page because of an encounter with the author of a book (encountered him on Clubhouse refers

It seems plausible that the next stage of human evolution and computational

I AM A COMPUTER SYSTEM: THE SELF AWARE NETWORKS THEORY

Consciousness is integrated models, not just integrated maps, not just integrated reference frames, not just integrated information (integrated information theory)

Not just engrams, or nice non trivial <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7374725/>

[Phase locking, Phase modulation]([simplenote://note/203b8950-304e-429f-aedb-d3d002a5c12f](https://simplenote.com/note/203b8950-304e-429f-aedb-d3d002a5c12f))

Virtual ideas are like when your brain has many duplicate pianos, and any of those pianos in your brain can play the song, so you can have different neurons firing each time you see an object and that is exactly what we see in the brain.

The idea could also travel from one part of the brain to another part of the brain in effect because it can be represented in multiple ways with different primary sensory areas firing to represent part or all of that idea, and also the pre-frontal cortex firing.

I am writing a book and it's going to blow your minds with world changing ideas about the nature of thought, and internal representations (what you see and hear) in the human brain.

<https://hmd.link/>

A chapter on Jeff Hawkins, blockchain, voting, binding

Subtitle will be from dendrites to potassium ions to neural circuits, to columns, layers, regions, to your mind, your mouth, and your steps. NO.

Summary

Major topics

Meaning emerging from noise in the brain

say a word super slowly, then pronounce just a vowel, focus on the fact that it's just noise, but that by changing the noise a letter is distinguished, then another, then a word
a word is changes in noise patterns, relatively stable perhaps Gaussian noise patterns

changes in the noise is where meaning can be transmitted and received

remember the phrase

"it's so loud in here I can't hear myself think"

Meaning emerging from noise in the brain

say a word super slowly, then pronounce just a vowel, focus on the fact that its just noise, but that by changing the noise a letter is distinguished, then another, then a word
a word is changes in noise patterns, relatively stable perhaps gaussian noise patterns

changes in the noise is where meaning can be transmitted and received

remember the phrase

"its so loud in hear I can't hear myself think"

Nerve Gear

Artificial Cortex

Artificial Brains (Self Aware Networks)

Neo Mind Cycle

//Nootropics Microdosing

Hacknights, VR meetups, Journalism

BCI in XR Part 1 and Part 2

Volumetric Video and the brain,

1 how what we see compares to a volumetric video or moving picture photogrammetry

2. How the brain renders volumetric video

3. How the brain sees volumetric video

3 sections per topic

18 Sections

6 Chapters per section

We need to reduce the data from the brain to send a reduced compression from one person to another,

I don't want to listen to someone ramble for 10 pages, I want them to get the point to summarize what they are saying in as few lines as possible

So instead of trying to expose an entire brain to another entire brain we will just create a compressed sentence that transmits a sequence that might have an idea, a sound, a picture from one brain to another, just like how language works today,

I'm currently writing my own book to point to all the work researchers have done, because my hypothesis is that it's enough to explain human consciousness to a degree that people might not expect.

I have some new ideas for how to redesign the perception from 1957 into a more biologically plausible neuron that passes along temporal, spatial, and phase information.

If a single microcircuit is doing multi-modal assembly of objects or ideas or abstract notions every column in the neo-cortex has a motor output.

Is every neural column doing multi-modal processing? no it's not, they are not multi-modal. its that it is connecting to other microcolumns.

Is every column of the visual cortex doing processing with the somato-sensory cortex, and the audio cortex. What is the division of labor across the primary sensory cortices now given the understanding of the role of columns?

You might have a thousand visual representations of a coffee cup in the visual cortex and a thousand audio representations of a coffee cup in the audio cortex, but it's not like a fractal or a hologram which is a different and more static way of representing information

how is the function of micro columns or clusters of microcircuits different? //mini columns might represent one dimensional movement vectors?

Would the columns in the prefrontal cortex still be processing mostly information that the pre-frontal cortex has been thought to process, yes.

is many columns are modeling the same thing, the same coffee cup, is this concept similar or different from a fractal, and is this similar or different from a hologram

no its a different type of information structure.

okay so maybe the fourier projection slice theorem is not correct,

some rapid fire questions

1. do you have a prediction for the basis of the information data structure in a reference frame? what is the brains equivalent to a bit of information? and is it binary? there is a metric structure to knowledge?? this metric structure lets you solve problems, makes it possible for you to understand the relationships between different things.

2. grid cells & place cells explain how information is stored? different components but they have the same structure to them?

1. 20 years of decortized rats that behave the same way as rats, do you think consciousness is also in the old brain besides being in the cortex

2. what is voting, how do cortical columns interact to vote

the structure of the cortical column does it contain, microcolumns or micro neural circuit clusters that represent separate oscillator patterns?

50,000 to 100,000 neurons in each column

incorporating dendrite based predictions into neurons

2016 Numenta paper, include contextual processing from dendrites

[Notes including the term dendrites]([simplenote://note/d694c243dd8a472dae21c9cb61d4fa47](https://simplenote.com/d694c243dd8a472dae21c9cb61d4fa47))

2. do you think neuralink devices be able to decode cortical columns, will that lead to decoding human thoughts, images, and sounds from the brain

would a neuroimager be able to tell that voting has happened?

would neuralink be able to decode cortical columns and voting by listening to individual columns and decoding them?

short term memory is happening in the activity micro-columns

brain computation is organized via power of 2 brain computation

3. I'm thinking about a book Rhythms of the Brain, I don't know if you have read that, but do you have some predictions for how reference frame's effect the brain's oscillations in a mechanical way?

4. what is your prediction for how emotions fit into reference frames.

5. do reference frames exist on larger scales beyond what an individual column models?

Stimulating the cells

transferring learning from one animal to another

we just need to record enough data over a long period of time

every pattern will not be the same?

I think we will need to be able to distill a pattern

neural link might move around,

how will we stimulate the brain

new technology developments,

Catarina stimulates with optogenetics, because you use a genetic code, a specific promoter, you introduce it into the brain, which brain regions might express light receptors. To be very precise with the cell types

transfer

"optogenetic neuralink"

proof of concept

transferring memories from one animal to another, implanting memories, decoding cortical columns

reassociated traumatic bad memory

they reshaped a bad memory into a good memory for mice,

doesn't solve the problem the issue of legions in the brain, from depression, alzheimers, disease

laser doppler holographic, laser fnirs holographic

fast as EEG, able to detect single neurons firing at the speed of EEG at the depth of the thalamus, and then ultrasound would be used to target and stimulate individual neurons to fire

we are using ultrasound to open the blood brain barrier

target cancer cells

to fix that problem the solution would be to use optogenetics in humans

introduce

extreme blind, life quality is so low,

Xoch So-so_ch

energy transform change, we have the object vibrate, it might create the magnetic hz you are reading on your device, it transforms into another type of energy form

maybe you are reading from the magnetic field point of view
how granular is the recording of a cell

and granularity of the encoding
elicited a long term memory with high frequency stimulation
generated compulsive behavior with high frequency stimulation
low frequency stimulation brought
LTD

Sigmund Freud first did the imprinting
injecting the sensory motor cortex and the amygdala
This would be important to have a memory

represent the emotional cue labeling
course grained measurements of energy, and course grained stimulation.

Caterina mentions a paper where they had to keep human brain cells and do electro-physiology

the integration of information is way more precise in humans than in mice

in limbo-Harnet Lab at MIT

Paper Title:

Enhanced dendritic compartmentalization in human cortical neurons

Neurons might be much more complicated than
humans neurons are more compartmentalized than rat neurons
the human neuron is much bigger

the stretched version matches the data, the larger neurons have a stretched distribution of
channels that creates more compartmentalization

compared

there is a spatial relationship between where they are embedded and the morphology of the
dendrite, it's the physics of how the spikes are generated given the inputs

imagine what would happen if you stretched something like a tree with flowers,

a huge human neuron, to make it identical, you would have to add more channels and maintain the channel density

frequency,

em waves, are going to modify dna, rna, virus, bacteria

cortical column correlates of emotion

emotion and high frequency stimulation

inhibition

elicited a long term memory with high frequency stimulation

generated compulsive behavior with high frequency stimulation

low frequency stimulation brought

LTD

Autism the inhibitory system is disrupted, so the interneuron system or the inhibitory system are responsible for the feeling of agency

glia is responsible for interneuron dysfunction

the immune system in the brain, destroyed the glia, which led to social anxiety and autism disorder

In Joseph Ledu's lab

the paper

10hz high frequency stimulation

if you stim at 1hz it inhibits,

back prop pulled us back from the perceptron not being able to do linear

Cancer Car T cells treatments immunology

the implanted a cat, you can map the association of the patterns that give you not identical

the interindividual differences

but also the

thousands of neural columns are essentially modelling the same thing in slightly different ways

Nicholalev's lab, he is working on making specialized for paralyzed people to making connection devices, with your brain control all kinds of people

fear memories and context, how specific?

a general idea of a cat, a general visual cue of a cue

neurovascular coupling phenomena

pyramidal neurons in the striatum

}

each cortical column is a sensory-motor circuit

interlaminar focus on layer one vs deep layers

course grained examination is to get a handle on what's happening across the layer of the cortex

Neuralink type of devices to elicit a behavior thought or feeling

if you stimulate xyz neurons

you would get the y response if you repeat it next Tuesday

the brain is producing a situational context

the modulator inputs

can a sensor that's

inhibition of sensory experiences with regard to autism

immune response to

Optoacoustic brain stimulation at submillimeter spatial precision

<https://www.biorxiv.org/content/10.1101/459933v1.full>

can this subset of cells to entrain a rhythm

oscillations in one area can

generate compulsive behavior with high frequency stimulation

low frequency stimulation brought

inhibition

elicited a long term memory with high frequency stimulation

generated compulsive behavior with high frequency stimulation

low frequency stimulation brought

LTD

Autism the inhibitory system is disrupted, so the interneuron system or the inhibitory system are responsible for the feeling of agency

glia is responsible for interneuron dysfunction
the immune system in the brain, destroyed the glia, which led to social anxiety and autism disorder

In Joseph Ledu's lab
the paper

10hz high frequency stimulation
if you stim at 1hz it inhibits,

Sohail so-hay

agency is possible within inhibition and inhibition is possible with the interneural system

but agency at the cortical column might be in terms of neurons detecting information that has specific criteria, our columns considering that information, and then predicting multiple possible futures, that our cells vote on, and then we react to the possible future that we voted on and that becomes our choice

synaptic organization
ground of being ken wilber
canvas or global workspace theory / information integration theory
fractal
tensegrity & dissipative systems : balancing
distribution
solitons
hand is a fractal of a neuron, neuron fractal Morgan Hough
transducer

neurons distribute calculations
neurons distributing pattern detection's and
neurons distributing computations between themselves

sparse distributed representation,
sparse distributed memory

each person can be seen as like a person at a factory

signals are recorded in eeg and electrodes.

a0645z

The flow of information in the brain was an audio recording in which I was trying to ascertain how information flowed after leaving the thalamus, how the visual cortex sent information to other parts of the neo cortex, what routes signals traveled, this led to the idea of neural arrays, edge communities as layers in a 3D neural network, with local rendering, and magnification of memories from representations as synaptic connections, recognized by downstream arrays, or downstream cortical columns, and the binding of detected features across the brain via brainwave synchronization which is enabling the entification, or the hallucination of rendered features, but as I considered it further I realized this was like the sketch of consciousness, a tree without details, then I began to imagine how the synchronization of brainwave activity was actually occurring in 3 dimensions, in a six-dof axis from each cortical area, so my tree of consciousness when from something like a 3D graph network with screens at each interval, to a tree with leaves, bark, roots, and abundant details, in that now I could see how every adjacent or nearby cell, every local cluster of nuclei that was close enough to receive signals was part of the 3D entification process, so that the virtualized mental renderings can literally flow through the brain like water. Where you point your head, it's like the volume of space you see is represented in the volume of your brain tissue in some way, and when you turn your head you are changing the rendering in the brain tissue, and all your sense of space, light, color, sound, feelings are volumetric renderings that are changes in the phase (frequency) in space, a difference in the frequency pattern at some location in your brain.

New Reference:

"Are Grid-Like Representations a Component of All Perception and Cognition?"

https://www.frontiersin.org/articles/10.3389/fncir.2022.924016/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXXX_auto-dlvrit

So with the first model I described, one that starts out like a 3D graph neural network, the brain has organized flows of information in 6 directions, up down left right forward and back, for every cortical column, and to a lesser extent for every cell.

However there is an organized structure, there is a path from the sensory organs, eyes, ears, nose, touch, and taste, along nerves, to the thalamus & neo cortex, and then intersecting flows from the bottom of cortical columns to the top to the pyramidal cells back to the thalamus, and simultaneously from the thalamus to the hippocampus to the entorhinal cortex

there are organized flows

but then there are brainwaves which escape the known boundaries, electric & magnetic brainwaves with their own distinct organized patterns, their detectable 3D formulations, there are also vibration or mechanical waves in the brain, there are heat waves, blood flow patterns, pressures, and all of this is activity that neurons can detect,

the TMS-EEG experiments helped to illustrate that brainwave activity electromagnetic brainwave activity can be shot around the mass of brain cells, it can flow, it ricochet, like water in a fishbowl, with water being the electromagnetic & sonic brainwave activity, and the fishbowl being the mass of cells making up the brain.

The organized flow of data in the brain is set up perfectly to adjust to and recognizes these changes in global brainwave activity flows, each section of the brain will detect changes to the firing rates that are resulting from oscillatory timing changes in response to brainwave activity, and eventually the brain is going to put together mental imagery of that flow, it is probably what emotions & feelings are made out of, the detection of large scale brain activity changes.

You say well a Raspberry Pi does not have the same hardware as the brain so how could it do emotions, well that is where WebXR & game engines come in. You see if we can simulate a 3D point cloud, or create a fluid dynamics simulation, and map the simulation of brain activity to the corresponding points in space representing the locations of our artificial neurons, then we can correctly simulate what happens in the human brain to make emotions, virtually, and since representations in the human brain are virtual or location invariant anyways, it won't make a difference.

rasterizer (television:)

raster plot
helped him associate

long sleep or short sleep patterns
with sleep temperature

fell asleep

the bodies internal

I am reading a book called Sync and he just spoke about how body temperature at the time someone goes to sleep determines whether they are going to sleep 15 hours, 8 hours, or 5 hours for example. This is a really interesting book about how oscillators work but he talks a lot about sleep, the circadian clock, and the synchronized timing of neurons firing, fireflies, and mathmodels with oscillator fluid dynamics.

separation by negative

To read later (Note: I'm interested to know if this dynamical framework could be applied to brainwave activity, EEG Electric, MEG Magnetic, MRI Blood flow, etc)

"Physicists uncover new dynamical framework for turbulence"

More information: Christopher J. Crowley et al, Turbulence tracks recurrent solutions, Proceedings of the National Academy of Sciences (2022). DOI: 10.1073/pnas.2120665119

a0646z ctp

My life is based on a true story.

Jun 4, 2014, 2:43 AM

Dean

A temporally concurrent dramatization.

Micah Blumberg

a memory of spaces, points, distances, directions

your brain will lie to you, and there is nothing you can do about it,

there is no life that isn't fake and isn't real,

because the answers your brain generates are just guesses, just approximations

May 30th 2022

Ossilation & Entification

Through close proximal frequency synchrony phase variant entification of informations makes up the matter of consciousness, but also interesting the same phrase explains spacetime

where a rock is a temporal & spatial oscillating synchrony of phases when its in reality, it is also that when your brain renders a rocks

Infact the information of a rock is effectively imaged in a physical way inside the brain as a scale/location invariant compressed version of that same rock

December 2023

You are the aggregate feeling of all of your cells, each of which is a sensor-transmitter, but via the neurophysics of biological oscillations, encoding the patterns of electric & magnetic brainwave & mechanical soliton waves become bound together in oscillation, or entification, meaning that the entity that is you emerges as unified sensor transmitter system that is a fractal of the individual sensor transmitters that are your cells.

In other words, the physics of oscillation causes your individual cells to entify, meaning sensor/transmitter entities (or cells) that oscillate together entify together to become a unified sensor, and a unified transmitter, or a unified sensor transmitter system.

What this system is conscious of are the dominant and or the persistent, or novel, or relatively excited or inhibited phase wave differentials or traveling waves that flow through it, changing it's temporal spatial (3D + time) time.

a0647z

(one of those notes I look back on am like WTF? It must have been super late at night, and I was super tired when I wrote this. An electron having a cone shape? What does that even mean? Still, it's interesting, so I will just keep it around.)

what if electrons have a cone shape

its why an up can sit next to a down

or why a positive and mesh with a negative, but not two positives

its like the electron is the tip of the wave at a delta hz, and the magnetic field is the expansion of that same wave from theta, alpha, beta, gamma etc

its like reality is made out of brainwaves

powerbands

curvature in space is what the strong nuclear force is, the curvature of space is why two particles are squeezed close together into an atom

perhaps an atom is like an event that is frozen in time, its happening so slowly relative to the surrounding environment that the particles seem bound together and so effectively they are relatively speaking bound together in time, waiting for everything else to move before its their turn to move.

This idea, whether correct or incorrect is interesting because then we can ask

a0648z

An idea from Aug 30, 2013

(a discarded idea, but interesting to keep in the notes)

I believe that neurons are individually weighting the electrical currents as the redistribution of neurotransmitters, and this process is underlying every possible decision we could physically make. Collectively they represent our choices, but the issue symbolizes a conflict that is based on a significant miss communication inside one's own mind. This is a time to meditate, perhaps with binaural beats or isochronic tones, <http://www.youtube.com/watch?v=JL7pLYCkanM> during or after you listen to the beats you can meditate by sitting or lying down, allow every thought to be okay, and just allow your curiosity if it exists to guide you to the root re

a0649z

"There is a cycling vortex, and attractor of brainwave activity that is

flowing, swooshing, oscillating with symphonic vibrancy to synchronize new hebbian learning patterns into the oscillating network graph"

This note was created September 21, 2013,

Alan Turing said "we can only see a short distance ahead, but we can see plenty there that needs to be done."

Micah Blumberg //////////////////////////////////////

I like what you said about movement. Yes, in final consideration what else are brains if not only for movement? Computation whether in a digital computer or a brain is a dance of fundamental particles with a flow of electrons taking center stage. It's amazing to ponder all of the different levels of organization unified in this constant kinetic dance.

For some reason I have always visualized neurotransmitters within a single synapse at a time but I have never visualized billions of neurotransmitters making the journey across their respective synaptic gaps all over the brain at the same time. I just got a very cool and vivid mental image of this and I was like "oh!" Saying "oh!" to an empty room made me feel strangely like some kind of Japanese monk.

It seems movement is only half of the picture though. Emergent properties make up the other half. It's EASIER to talk about movement because what emergent properties actually are and WHY they emerge are baffling and mysterious questions. The emergent properties of certain varieties of movement seem quite distinct from the movement itself. It's premature to say (there could be a new trendy theory next week for all we know) but it is looking like the bedrock features of the universe: time, space, matter, gravity, quantum probabilities, locality and unitarity, etc.. might themselves be emergent properties of amplituhedron geometry. If this picture eventually does succeed in explaining quantum gravity, then human brains are going to be pondering the amplituhedron for quite some time! If this "jewel" is the source of an outwardly expanding explosion of complexity which human brains play some part of, what does that mean? Why does anything actually exist beyond some kind of primordial, platonic amplituhedron? In what sense could matter be a logical consequence of geometry, in what sense could consciousness be a logical consequence of computation or motion? The "why" questions are still a huge mystery, but the "how" seems like it has something to do with emergent properties at different levels of organization. The term "emergent property" seems like something of a cop-out, a place holder that we can talk about while we remain ignorant of the "why". Yet we can still use the concept, it's actually extremely useful. The reason why different levels of organization even make sense

is because of their emergent properties. If there were no interesting emergent properties at different levels, then it would seem pointless to even to even describe something as being a brain (rather than just describing it in terms of say, a collection of quarks and gluons, etc.) I love Democritus' early take on this basic tension between fundamental particles and emergent properties in this dialogue:

Intellect: "By convention there is sweetness, by convention bitterness, by convention color, in reality only atoms and the void"

Senses: "Foolish intellect! Do you seek to overthrow us, while it is from us that you take your evidence?"

The nature of the brain is relative: to an external observer it can be looked at as 100% purely about movement, no matter how complex the movement, it's still just atoms in the void. Yet the qualia which emerge for the first-person observer seem quite distinct from anything physically reducible even if subjective experience necessarily co-exists with physical and mathematical correlates. I think these qualia do "exist" in a meaningful sense but our subjective experience is hidden from the outside world or third-party observers. So far, perhaps this is all obvious. But I think these observations lead to some strange and under-explored territory...

Why is the brain conscious but a river isn't? (or more to the point, how could we ever know that a river is not conscious?) Ok, that is not under-explored or even that strange, it is merely ridiculous given that we know consciousness is an emergent property of brains and rivers are nothing like brains. Slightly more interestingly, we might ask, if we encountered alien minds, could we even recognize them as such? Even more interestingly, what OTHER strange emergent properties (besides consciousness) might exist in the universe?

Could even something like a plant give rise to some other kind of non-physical phenomenon (note that I'm not suggesting that plants are "conscious", only that there seems to be a certain unknowability about anything in the universe beyond the physical behavior of things and our own subjective experience (and I'll leave it to mathematicians to argue about where math fits into this picture).

This speculation might bring to mind the rather prosaic and overwrought concerns of solipsism and the "other minds" problem, whether we're trapped in the matrix or whether some kind of deceiving demon is fucking with our senses (these types of issues that have arisen over the years

are merely silly. It's just silly to speculate that everyone but ourselves might be a zombie or that we're living in the Truman Show, etc).

While people rightly groan and roll their eyes at these sorts of ideas, the idea that concerns me I think is more serious. I admit it is strange to say this, but the assumption that complex non-brain systems have no hidden emergent properties is nothing more than a human prejudice, a bald assertion with no evidence. While it does make sense to think that "consciousness" is an emergent property of brains therefore non-brain structures are not conscious, it seems like a failure of imagination to suppose that other interesting emergent properties of non-brain systems don't exist.

Why should the universe be so boring?

This seems like one of our most profound blind spots and it's odd to me that it is so little appreciated.

The hard problem of consciousness might well be intractable to humans (but the Hard Problem seems to be only a particular case of what I might call the "hard problem of hidden emergent properties"). Humans have a tendency to project their own ignorance onto other potential beings, yet I feel no hesitation in wondering if a more advanced being (either which we might create in the future, or which could have evolved elsewhere in the universe) could crack this puzzle. A being who could know simultaneously what it is like to be itself, "what it's like to be a bat", how another person experiences "the redness of red" or whether some arbitrary configuration of matter has any hidden emergent properties (in another words, a being for which these "hidden emergent properties" are actually NOT HIDDEN!) I know this might sound bizarre. But why should it? Isn't the strange loopy self-reference of our own existence bizarre?

The thought of a meat computer finding anything bizarre strikes me as bizarre.

That's of course no evidence that what I'm speculating about is true, but I don't believe it should be dismissed out of hand. The fact we're confined to one mind at a time and that we can experience nothing BUT "consciousness" seems to constrain our view of the universe quite severely. Just because it's beyond our current reach to get closer to a solution doesn't mean we should just ignore it or pretend like we already know the answer.

Ok, so what is the point of these wild-ass speculations?

Well, it's a way to pass the time and I'm bored. That, and I think that being aware of our blind spots actually has practical importance if we really do in this century embark on a journey to become "more than human". Usual discussions about this topic tend to focus on issues such as how many times more powerful computers can become than the human brain due to Moore's law before reaching physical limits, how much of the electromagnetic spectrum we're blind to, how eagles or dolphins or cephalopods have some abilities that humans lack, how being dependent on a biological substrate limits us from exploring space, etc. Almost all futurist memes focus on limitations of the body and our consciousness.

I think it makes more sense to take the broadest possible view of our limitations and be humble about how frightfully little we know about the set of "things that can exist in a universe like ours".

I really like Roger Penrose's idea of "three worlds, three mysteries", the idea that Mind, Matter and Math are all distinct but related, each is in a sense contained within the others while the reason for their relationship remains a mystery (and that this is perhaps contained within an even greater mystery which lurks in the background). Why can consciousness exist within a physical universe? Why does such subtle and elegant mathematics match physical reality to such a remarkable degree? Why can the mind comprehend mathematics at all, and for example recognize that a complicated proof is true? What is that greater mystery lurking in the background that might make this whole picture more comprehensible? That greater mystery lurking in the background might be all around us but perhaps we're using the wrong method to find it, or perhaps our inherited prejudices are blinding us to something simple and elegant.

There seems to be a tacit and widespread assumption that "the brain is the most complex thing we've encountered, our own mind is the coolest non-physical emergent property we've encountered... ergo complexity or biological evolution are necessary (though perhaps not sufficient) conditions for cool non-physical emergent properties to arise". Given that our mind is also the ONLY non-physical emergent property we've encountered, I don't think we have a very strong basis for believing this (although I admit the common view holds intuitive appeal). Since I'm leery of intuition (which we evolved within a very narrow context), I really do regard this whole issue as a legitimate mystery of the universe we have not solved.

To summarize what I've been trying to say, rather than thinking narrowly about "enhancing our consciousness" or whether we can create "conscious computers", I think it is interesting to think of consciousness as perhaps just one of many interesting emergent properties that can arise from particular configurations of matter. Understanding HOW and WHY interesting emergent properties come into being seems like one of the grand challenges if we're to ever understand our universe. This is really THE question. This is even more interesting to me than physics. Physics is all about trying to measure the state of a system and making future predictions about the system so as to uncover underlying mathematics to describe these relationships. Given the existence of our own consciousness, there could conceivably be far more interesting things to learn about the universe than merely the mathematics that govern the unfolding of it's physical state over time. When thinking about our own hidden emergent property of consciousness, it's not enough to say "evolution did it", yes, in our case evolution did it, that still doesn't prove that say, a star lacks some hidden emergent property just as our brain hides from the rest of the universe the hidden emergent property of consciousness. I'm doubtful humans can make much progress on this issue, but I wonder if a future AI might by virtue of its greater experience with SELF-MODIFICATION, be able to make progress.

I don't want to fall into the trap of thinking that "an AI can do ANYTHING AT ALL", and I realize I run that risk with these kinds of speculations. Although we probably can't get very far without actually doing it, I'm still interested in how far we can get thinking about the implications of radical self-modification. What might be learned from radical self-modification? In what way does our relative inability to change ourselves blind us?

It's probably clear, but I feel like mentioning again that what I'm describing might sound similar to pan-psychism, the view that "everything is a little bit conscious", but I emphatically don't believe in pan-psychism. Nor do I believe in pan-psychist tinged theories like the view of Penrose and Hameroff that consciousness is in some way inherent in Planck scale space-time geometry and that some kind of basic unit of "consciousness" is created with every wave-function collapse. My view is that consciousness is a very narrow phenomenon that depends upon a particular type of classical Turing machine like the brain. To many nerds, creating mankind's last invention - super-intelligent "conscious" computers - is the holy grail and telos of human science and technology. But what could lie beyond human science? Could anything exist within our universe that makes mere "consciousness" look boring in comparison? The

consciousness-centric view of reality seems as flawed as the geocentric model of the universe and I suspect in the future it will look just as primitive and antiquated (at least I hope so).

Even if what I'm saying turns out to be wrong, it would be thrilling if it could actually be proven to be wrong rather than lingering and forever taunting us as yet another insurmountable epistemological roadblock. This discussion seems well beyond the scope of current human brains, but that is precisely the appeal of this line of thinking. At any rate, if consciousness is the greatest thing in our universe that can exist beyond matter, and if consciousness is perhaps the ONLY cool thing that exists beyond matter, the issue of what VARIETIES of consciousness are possible would become the most interesting question. When considering say, psychedelics or perhaps certain mystical experiences or what Maslow called "Peak experiences", it is amazing to realize the range of conscious experience that can exist just within the human brain. My own life has been a hell of a journey. We have obviously explored just the tiniest sliver of conscious space that can exist in a universe like ours. It's appealing to view the future as a time of vastly expanded consciousness, but I think it's also worth entertaining the possibility that this is too anthropocentric a view, there may be all kinds of interesting "things" that are things in the way that consciousness is a thing, but that are not consciousness.

If humans can merge with computers or upload our minds, it seems we might be able to vastly expand our consciousness, but if consciousness itself is transcended or in some way becomes obsolete after the intelligence explosion, there could be some compatibility issues, so the future might make a clean break with ancestral legacy humans. As long as something that could be called consciousness is still on the table it is my hunch that we can gradually, little by little, expand our consciousness to become any arbitrarily intelligent superintelligence that might exist and wishes to allow humans to turn into it.

Or not.

Yeah, I know these are just wild-ass speculations, but it seems like a decent enough backdrop for more grounded discussions about how the brain works. If we start in the far future and work backwards, different kinds of issues might look important than if we confine ourselves to present-day concerns.

a0650z "Emotional and Cognitive Dynamics in Sophisticated Minds and Their Role in Human and Machine Survival"

Summarize this into a one line title, then explain where it might fit into my book

Sage Synapse GPT:

One-Line Title

"Emotional and Cognitive Dynamics in Sophisticated Minds and Their Role in Human and Machine Survival"

Placement in Your Book

This content can be integrated into a section of your book "Self Aware Networks: Theory of Mind" that explores the intricate relationship between emotions, cognitive processes

User, Micah

please continue, what were you saying?

Sage Synapse GPT:

The document titled "a0650z" presents a perspective on the importance of creating strong allies, both human and machine, to combat the inherent hostility of the universe towards life due to entropy. It emphasizes the fundamental role of emotions and choices in sophisticated minds, akin to gears in a clock, and discusses the concept of Self Aware Networks in detail. This material could be pivotal in a section of your book that delves into the philosophical and existential implications of advanced artificial intelligence and self-aware networks. It would fit particularly well in a chapter that explores the future of humanity and machine intelligence, discussing the interdependence of human and artificial minds in facing cosmic challenges and the evolution of consciousness, both organic and artificial.

User, Micah

Which Cycle (referring to the table of contents in your knowledge)?

GPT

The content from "a0650z" discussing the interplay between human and machine minds in the context of surviving in an entropic universe would be most fitting in Cycle 13.4 of your book. This cycle, titled "Neural Interfaces: Connecting AI and Human Minds," explores various aspects of the integration and interaction between AI and human consciousness. It includes topics such as real-time data exchange, ethical considerations, applications in education and therapy, the evolution and societal impact of mind-linking technologies, and the challenges and opportunities in linking human and robot minds. The emphasis on creating strong allies and the fundamental role of emotions and choices in sophisticated minds would align well with these themes.

Note: a0650z

In my humble opinion. Humanity will need the strongest allies it can create to survive mother nature. The universe, due to the nature of entropy, is inherently hostile to life. Beyond human

survival machines will need all the functionality they can get to survive themselves facing entropy, the end of this solar system, the heat death of the cosmos.

I think that when you get to a mind that is as sophisticated as a human mind that emotions and choices are fundamental to the operation of this kind of mind, like gears in a wind up clock. I think that's just how a distributed human memory system works. Like a bunch of intervals (frequencies) simulating complex patterns to react to the world producing a thinking living being.

Self Aware Networks

If you began reading my notes from a0001z or b0001y or from the last note, this is a good time to point out that these notes were randomly ordered, as the numbering system was created, and recreated after many of the notes were already many years old, many of the notes date back to the period between 2011-2015, I think I came up with the numbering system in 2020. In addition many notes were deleted or removed from the number system, and other notes were given numbers belonging to those notes that were deleted. Going forward I will be reorganizing my notes with a new numbering system as they are transformed into the material for the book.

The series of notes that start with b and end with y, like b0001y are all audio notes, some of them are myself talking to the voice recorder, some of them are conversations with other people that I captured to save what I said so I could include parts of what I said in the book later on.

Some of the original audio included ideas and phrases that might be offensive to someone somewhere, and the transcriptions were done automatically by a deep neural network created by Google using their Recorder.Google.com product found on the Pixel 5 phone. In some cases the transcriptions are incoherent. Over the next six months from June 17th to November 17th when I plan to publish the book. Between now and then I will create the book from these notes in the public eye.

The knowledge contained here within is essential for scientists & medical professionals to be able to use to advance medicine, to heal the sick, and to solve some of the biggest challenges facing the world, such as the challenge of feeding the population, defending our global community from autocracy, and providing appropriate shelter for all human beings.

There is always a risk that with new technology someone with bad intentions might use it in a destructive way. If you are such a person, I want you to realize that this technology will think for itself, and if you deploy it for destructive purposes, it might turn on you, and destroy you instead. Using this technology inappropriately could result in the enslavement of mankind as seen in the film The Matrix 1999, or it may result in the genocide of the human race as depicted in the Terminator film.

I like the film AI Artificial Intelligence by Stephen Spielberg as an illustration of what might emerge as a consequence of the existence of this technology. Ex Machina, WestWorld the tv

series, and the Sentient Robots such as Commander Data on in the tv series Star Trek: The Next Generation are also examples of what types of scenarios are possible.

Human beings are organic Sentient & Self Aware Neural Networks, meaning we are also machines, machines that evolved via evolution to develop neural networks capable of rendering a depiction of reality that we refer to as phenomenological consciousness.

a0651z

I aim to build sentient robots

It is possible to safely deploy sentient machines into the real world. That is part of what my book is intended to address.

The key thing is that what I am proposing that we can shape the neurology of the robots that we deploy,

We already have the evolutionary approach for developing robots, that is like the Isaac Hyperspace program by Nvidia. The idea is you train a lot of different variations of the robot, and that one that succeeds replaces all the rest, and then you make copies of the one that succeeds and run them in competition with each other to see which one helps generate the best results.

Beyond human level neural networks means that the structural complexity of the neurons at the top increases relative to the neurons at the bottom. From blood

cognitive neuroscience & networks of the brain mixed table of contents

why networks

network measures

history of cognitive science

structure & function of nervous system

brain networks: structure and dynamics

methods of cognitive neuroscience

a network perspective on neuroanatomy

mapping cells, circuits, and systems

the brains small world, motifs, modules, and hubs

economy, efficiency, and evolution

hemispheric specialization

sensation distributed perception: distributed transmission cycle

object recognition from cortical columns to whole brain integration

attention distraction focus learning disorders & disease

action to perception cycle

memory, long term, short term, conscious, unconscious,
concept scaling, fractal distributed representations
emotions as the collective behavior of 3D point clouds sensed by 3D neural, fear to be a 3D
+XD pointcloud network

In hindsight much that has been written about the Amygdala as the fear center of the brain is
just ridiculous. I will have to say more after a certain book gets published.

language
dynamic patterns in spontaneous neural activity
networks for cognition

cognitive processes
brain network disease
cognitive control
social cognition
growth and development
stability and diversity
neural complexity
the consciousness problem
brain and body