

a0351z - a0569z

a0351z

(field, graph)

#Laser Doppler imaging is as fast as EEG but not very deep, but what if we mix in holography?

I met a guy who helped to launch a company out of Israel back in 2014 that used a combination of laser light and doppler to image brain blood flow

He said that "functional MRI depends on blood flow.

"When a neuron becomes more metabolically active ostensibly because it's engaging in more firing activity that activity requires more consumption of glucose and oxygen which then of course requires the greater amount of blood flow to that neuron.

"So the neurovascular unit is the coupling of the blood flow, and blood vessel to the neuron itself.

"Functional MRI can take advantage of that increase in essentially glucose and oxygen delivery to be able to indirectly represent electrical activity but there are temporal limitations (it's slow).

"The advantage to laser doppler is that we can get almost instantaneous signal representation of brain blood flow changes probably it's greatest limitation is the depth of penetration into the skull and the brain tissue is somewhat limited by power if you increase the power of Laser Doppler too much, you can actually damage underlying brain tissue and blood vessels but in terms of trying to get very high temporal resolution, it's almost instantaneous feedback and closely parallels that what we see on the electroencephalogram"

This was the laser doppler company he was talking about, he thinks it was purchased by a company in China.

https://finder.startupnationcentral.org/m/company_page/ornim-medical

I have seen several papers on the topic of laser doppler imaging. This one is interesting

"Lock-in vibration retrieval based on high-speed full-field coherent imaging"

<https://www.nature.com/articles/s41598-021-86371-3>

###holographic

The word "holographic" in that article popped out at me a couple times when I was skimming it.

"More recently, the use of high-speed sensors permitted to acquire holographic data at the time-evolution of the studied phenomena"

![Image](https://i.imgur.com/e4r8wLM_d.webp?maxwidth=640&shape=thumb&fidelity=medium)

That's it. Read the science paper I linked to go deeper.
[Lock-in vibration retrieval based on high-speed full-field coherent imaging](<https://www.nature.com/articles/s41598-021-86371-3>)

Note by Micah Blumberg.

Micah is currently writing a book on the brain, brain computer interfaces, and artificial intelligence.

[VRMA.io](<http://vrma.io>)

a0352z

Note uploaded on Jul 13, 2017, but it was probably created 5 years earlier.

I am the founder of Neo Mind Cycle,

brain optimization with an audio & visual system,

sensors on a clients head to measure brainwaves, which then go into a computer to be converted into beats that are then converted into light and sound piped into an onscreen visual as well as see through light goggles and headphones.

electrodes on a person's head, measure their brainwaves with EEG, convert that data into specific frequencies that stimulate brainwaves from gamma, to beta, to smr, to alpha, to theta, and delta, with both light and sound, and this stimulation is driven by the brainwaves.

Neo Mind Cycle uses a brain plasticity protocol that is 1. engaging, highly interesting, because your feeling and seeing your own brainwave patterns in this deeply stimulating audio visual experience. 2. because it stimulates the whole mind in an engaging way it results in new brain maps, or regions of the mind that might have been separate now begin to talk to one another, neurons that fire together wire together, and this means the expansion of awareness generally, but also amazingly resourceful great ideas, feeling good because of stimulated brain chemistry, more success, happiness, confidence, it helps people who have ptsd, adhd, addiction, autism, and much more.

Tags:

brainwaves, neomindcycle

a0353z

(vector, category, theory)

I'm thinking about Category Theory (as temporal maps of transformations)

A -> B describes the transformation of a node in a temporal sequence.

and conventional mind maps (as spatial patterns, vectors between points)

A linked to B in a conventional mind map describes a spatial association, meaning either variable could invoke the other.

The arrow in category theory is likened to a function in other programming languages.

functions via html

If id value is () then do,

When id value is () then do,

Else id value is () then do

So $A \rightarrow B$ is like saying when A is true (in logical memory) the A (id of a variable which may include a set (matrix)) changes it's value to match the value of B (id of another variable defined elsewhere?)

So the arrow describes the temporal path of transformations.

How do we diagram visually the spatial path of associations between separate functions (like a string in Haskell?)

Is it just a matter of parenthesis, ie using sets.

How can we describe the positions

with morphisms that describe all the relationships between all the mathematical theories, all the artificial intelligence's theories, all the computer science theories, all the neuroscience theories, and more? Does it exist? Would you like this to be a collaborative group project? Using either web based mind map tools, diagram tools, and or other collaborative sharing tools.

a0354z

(category, theory, observer, layers, synap, neuron)

I had so many interesting conversations with Chase

Chase

January 9, 2014 ·

opinions? this kind of goes with what i was getting at when discussing accounting for Q-state interactions alongside gamma bandwidth patterns of neural activity regarding consciousness

Micah Blumberg

Micah Blumberg Consider this statement:

"Lanza says that we carry space and time around with us "like turtles with shells." meaning that when the shell comes off (space and time), we still exist."

If space and time is a shell that a consciousness carries around, then why do people have gaps in their memories, why do people have black outs, why do people fall asleep and lose consciousness? If consciousness was independent of spacetime wouldn't it be conscious all the time even when the body was sleeping?

Micah Blumberg

If you like the idea of a biological soul, I read this compelling book earlier this year or last year, its interesting <http://www.amazon.com/Soul-Dust-The-Magic.../dp/0691156379>

Soul Dust: The Magic of Consciousness

How is consciousness possible? What biological purpose does it serve? And why do we value it so...

Micah Blumberg

I have also read "The man who mistook his wife for a coat rack" by Oliver Sacks, and "Incognito" by David Eagleman, and I have read numerous papers on split brain patients. The problem is that when a scalpel or a drug, or disease, or prolonged malnutrition, or extreme trauma can change your personality, change who you are, split you into two souls, one in the left hemisphere, one in the right hemisphere, well then it starts to look like the soul is not independent of spacetime.

Micah Blumberg

In ancient times the atomists argued that everything was made out of atoms, not spirits, and the people who believed in spirits murdered the atomists to shut them up. but the collective cognitive trends that are trying to unite the atomic idea with the spiritual idea are forever trying to suppress and not think about certain contrary evidence, that can't be refuted, only ignored, buried, murdered, banished.

Micah Blumberg

I said before I don't believe people exist, rather there are cognitive trends doing this. Trying to capture new mindshare, like memes, like bugs taking over human brains.

Chase

thanks for your input, im going to check those out. i mean our bodies and even our brains are tools of our consciousness. without conscious perspective would the objects we associate with the physical reality still appear as they do, with consideration of the effects of an observer in quantum physics, or more so as just a network (considering all energy in the universe and varying densities across space time) of indistinct states of (overlapping?) superpositions of infinite possibilities? which really is what the universe/multiverse really is composed, and assuming such a quantum network existed and our spirits and awareness are resultant of quantum interactions occurring within microtubules in neural cells of the pituitary gland and temporal pituitary junction, with conscious information interpreted as vibrations and quantum interaction between the system of subatomic particles existing inside our neurons and those of the outside physical world as well as the bioelectrical, biochemical etc interactions, encoded as information

Chase

i do not believe that it is completely independent of spacetime, more like symbiotic, maybe in those periods the consciousness/subconscious is simply not deriving experience from any

outside physical stimuli, and any perspective that bases their reality on physical events will be less likely to take information from metaphysical experience, perhaps causing lack of awareness. or perhaps black outs etc are caused by the existing connection between brain body mind and soul, and so any trauma to the body causes trauma to the collective system possibly resulting in temporary loss of consciousness

January 9, 2014 at 3:20pm · Like

Micah Blumberg

1. On the observer effect. I don't think it means what some people think it means. It means that measuring quantum events interferes with quantum events. It does not mean people have souls. It does not mean consciousness has primacy over existence. It does mean the observer is creating spacetime.

2. Pineal glands are glands, they do what glands do, nothing else. The evidence that that the pineal gland has magical properties that imbue the brain with consciousness does not exist, even the idea that the pineal secretes dmt does not exist. The evidence that people claim exists for the Pineal Gland's magical properties also does not really exist. I tried to trace it down, to the hard research papers, it's not credible science. It's so awful when people I respect with brilliant minds fall for the whole story that the pineal gland is your third eye crap. If you just study more of the criticism of it, you can find on the web, you can rid yourself of this cognitive waste.

3. the realm of quantum physics can induce random electrical changes at the level of microtubules and synapses, but that's it, it's just random noise. It adds an element of chance, meaning more noise, that your synaptic activity must overcome to adapt and perceive. If the soul is communicating through random quantum fluctuations it's just interfering and being defeated by the brains systems on a regular basis.

January 9, 2014 at 3:49pm · Like · 1

Micah Blumberg

I see the brain like a movie that is watching itself. It's a ten thousand frame per second movie, it picks up new frames from the outside world, and adds them to the frames it already has, it does this to plan movements, reactions, patterns that result in nutrient rewards, or neurotransmitter rewards, serving the mechanism of replication via natural selection.

Micah Blumberg

I don't think there is such a thing as quantum soul because I think the quantum realm is just random noise. It's not orderly sounds, it's not messages, it's not doing anything interesting, it's just what it is. So what we think is the soul is just this strange loop (Reference Douglas Hofstadler) of cognitive songs with many layers tempo-spatial expressions. The brain is more like a piano, the neurons more like piano keys.

January 9, 2014 at 4:00pm · Like · 1

Chase

i actually have more interest in the temporoparietal junction than than the pineal gland

i am also looking at this from a meta-quantum-physical perspective more so than just the physical network processes

i definately see your points though and they are valid, but it just makes sense for our brain to have evolved to incorporate the use of quantum phenomena as well as physical phenomena just as CS is evolving to incorporate the same principles in quantum computing. and our brain is by far more advanced than any computer

Micah Blumberg Have you seen this

http://www.ted.com/.../aaron_o_connell_making_sense_of_a...

For me the important point is that quantum mechanics transcends and includes classical mechanics, the quantum physical sometimes behaves in a classical way, so the classical is a set inside the larger quantum set. Inside the larger set we know that everything in the cosmos is just the way it is because of everything else. We are literally defined by everything else.

I feel a cognitive trend, a voice, that wants to argue that meta-physics, or the beyond-physics, is an even larger set, it transcends both the classic and quantum, each of which are sets inside meta-physics.

Aaron O'Connell: Making sense of a visible quantum object | Video on...

TED.COM|BY AARON O'CONNELL

Micah Blumberg

I do like the idea of a symbiotic relationship between mass, energy and information, or between the chemical (classic physical), electrical (quantum physical), and knowledge (meta-physical). I think with the quantum perspective it seems like everything has a mutual causality. Within the classical perspective there are chains of cause and effect, chains of recognition and transmission, chains of consideration and reaction, chains of criterial deliberation and movement. Within a metaphysical perspective I think it looks like information patterns are driving biology, and that is a cool idea, but perhaps metaphysics is only driving cognition to serve thermodynamics, which is perhaps a larger physical set inside another metaphysical set.

There are those who argue that you can't have anything beyond the physical and that even information is physical, it must be, because it can only be expressed, known, seen, and communicated physically. Information does not have mass, energy, or velocity, it's a structure that sort of exists in time, and sort of outside time, like a sequence, like a causal link, or a temporal association. It isn't a pattern you can touch physically. Yet I think it information is physical in the sense that it is connective, it has distinctions, it is the causal relationships between other physical things. Anyway I think this is sort of far out speculation for me, so I trend onward. What do you think?

January 9, 2014 at 9:20pm · Like · 1

Chase

^beautifully written, i agree , i sort of see information as quasi-physical. our thoughts alter the physical world despite not necessarily being physical themselves. however there is also the side to the information that considers the correlations between various bandwidths of brainwave patterns and neuro electrochemical interactions

Chase

set mathematics are crucial to understanding this, for everything exists in a set, some overlap, there are subsets of sets and sub-subsets of information

Chase

for example, describing an apple falls into as many sets as are consciously assigned to said object, there could be a set; the apple is red, and a subset of that the apple is red because of light being absorbed, reflected, and interpreted by

Chase

correlations, relationships, assimilation*

Micah Blumberg

trivia: set theory is a set inside category theory

Chase

well category theory formalizes the concepts of set theory as well as other mathematical abstractions

Chase

categories of sets etc

a0355z

Aug 29, 2013

(hebb)

deep thoughts hmm... how about your thoughts are predictions, memories that become predictions, formed through a process of hebbian learning via the principles of neural plasticity, when neurons fire together they wire together, and so if you can imagine that any object you sense is a great current of electromagnetic wave oscillation ricocheting around the mind like an attractor vortex and the messy nature of this three axis heterarchical system means that thoughts are delusional mashups of live data from multiple senses, just approximate enough to be useful, for coordinating movement, so that the dna continues to exist in some form. at this point you could probably write off the three types of people as another delusional partition the mind makes, or keep it, shrugs

////////////////////

Jul 7, 2011

around a chemical ball, vast networks of electro-chemical reactions, utilize electric and chemical networks predicting, adapting, balancing, and optimizing a whole ecology of electro-chemical interactions, reacting to the electromagnetic waves generated by other chemical balls in a particle space of a looping relationship between increasing complexity (including mass and dissipative systems) and increasing entropy
stars are increasing and decreasing in density, space is electromagnetic indensity

Richochet TMS

a0356z ctp

Note from Mar 20, 2011

as the eye of a hurricane is to a hurricane, so mass curves spacetime, the mass is the eye of the hurricane, and it's spinning is cumulative, the cumulative of tiny hurricanes in the form of atoms, in the particle wind, so that's the reason there is gravity on large dense objects like the earth, the earth itself is isomorphic to a spinning hurricane, the earth would be the eye of the hurricane funneling space itself and everything in it towards the earth.

a0357z

Jul 10, 2011

(thalamus, cortex, neuron)

Micah Blumberg

30 years of neuroscience beats 5000 years of philosophy, I've read Wilber and many more. I've also read many neuroscience books. There is no observable mechanism of choice in the mind, it's a self similar structure through out, it does one thing in summary and that is make predictions, these predictions are part of one long chain of cause and effect. We automatically gather the best information we can, and we are automatically doing the best we can with the information we have. Choice really is an illusion, it's an illusion that might trick someone into choosing worse choices instead of better choices. Without choice we really do have to believe we are doing the best we can with the information we have, because technically its true there is no other choice.

From the senses electrical signals representing the frequencies of the world around us travel up the neo-cortex to the hypothalamus and back down again toward the senses. Along the way actions get triggered, feelings get triggered, thoughts get triggered, thoughts that may represent billions of neurons firing all at once. Creating a pattern that you suddenly think is a word that popped into your head just now. Maybe you brought your hands together suddenly. It might be unlikely another person can predict your every action, but we are all somewhat predictable. We can predict that at about 2 years old a baby will start behaving in a very terrible way. They call it terrible twos. Your breathing is automatic, your blood flow, your growth. There are so many obvious signs that you are an automatic being. As sure as a tree we reach for light, nutrients, and resources. When were not doing that there is some information we need, it could be nutrition information, or security information, or philosophical information. We gather information automatically. Stop. Are you still thinking or reading? See automatic. Even perfect zen, perfect stillness of thought is automatic.

Sebastian Stark

that is all true. But in a moment of action, you subjectively feel like making a conscious effort, Especially when it's a choice for action and an action that pushes you beyond your boundaries. Even if later on and looking backward and upon sth everything may seem to have been determined, you can't reduce the inner phenomenological reality. You can reframe it, so individuals might learn ever more what in their choices and actions is actually authentic and what has been given through mechanisms and context. If we may look upon it developmentally for a moment; you actually deconstruct everything through the course of your life seeing the mechanistic nature of things evermore and more. Seen from here: the ongoing deconstruction of your false beliefs are a relative intensification of your freedom from and too. So there is a gradual definition of freedom, which may make more sense than absolute freedom now and forever. That ongoing of the upward lifting deconstruction is guaranteed by the interaction of individuals within Society

once again, it's actually simple, so simple you might miss the point first: if you search for an observable free will, you, before you do anything, define free will as observable in a simple sense, right? But free will belongs by the definition of the word, primarily to the subjective realm. Now, if you could actually OBSERVE free will, it would be objective (an object, something to LOOK UPON), not subjective (that which is looking. When I am Looking at that which is looking, I still just see the outside of that which is looking, not the interior I-look-phenomena). You get it? The criteria you propose is a criteria of OBJECTIVE TRUTH, not SUBJECTIVE Truthfulness. BY THE LOGICAL VERBAL DEFINITIONS OF THESE WORDS you can't reduce them onto each other without getting logical chaos. That means, that the goal of science when researching anything like free will must be reframed, because an "objectivist method" like natural science can find what is "Objectively True", subjectivist methods find what is subjectively true

Micah Blumberg

I understand the issue you're raising however you're making some terrible assumptions "you can't reduce the inner phenomenological reality" oh can't I? The you that you are isn't really an individual, it's a collective, a collective of cells, singing the song of "I am". Everything you can sense, every feeling, every concept, every experience, and thought is a prediction. What you think is you is actually a network of electro-chemical reactions, it's 100 percent reactive. There is zero control, and the only thing your mind does in summary is make predictions. The concepts of choice and freewill lend themselves as predictions, means of explaining the actions of others when they diverge from your own. No balloon can choose to stop rising toward the ceiling. The only reason some balloons rise higher is that their corner of ceiling is higher. In this sense what we mistake for choice is more like altitude. As your awareness expands through life, your prediction-altitude increases, and you automatically make better choices. Literally some people are stuck thinking they are somewhat less than perfect because they are trying to hold onto the illusion of choice. Lose the illusion of choice today, it's the only way to perfection. :)

Tags:

choice, killed

a0358z

(thalamus, cortex, neuron, category)

Note Created Jul 10, 2011, 10:42 AM

I am trying to delete preachy stuff from my notes. I think people ought to have the freedom to make up their own minds on religious topics. Religious or non-religious beliefs are at the individual level concern, not at the Government or Corporate Decisions level of concern. It's not a decision for third-parties, like your parents, guardians, teachers, or local politicians to figure it out for you what religion you ought to believe in. That is subjugation, if you do not have religious freedom in your mall town. A lovely question that comes up sometimes under this topic is whether is choice is real or what is it mean if the cosmos is deterministic despite chaotic quantum scale fluctuations inside our brains?

Determinism & the Brain

Micah Blumberg (July 2011)

30 years of neuroscience beats 5000 years of philosophy, I've read Wilber and many more. I've also read many neuroscience books. There is no observable mechanism of choice in the mind, it's a self similar structure through out, it does one thing in summary and that is make predictions, and these predictions are part of one long chain of cause and effect. We automatically gather the best information we can, and we are automatically doing the best we can with the information we have. Choice really is an illusion, it's an illusion that might trick someone into choosing worse choices instead of better choices. Without choice we really do have to believe we are doing the best we can with the information we have, because technically its true there is no other choice.

From the senses electrical signals representing the frequencies of the world around us travel up the neo-cortex to the hypothalamus and back down again toward the senses. Along the way actions get triggered, feelings get triggered, thoughts get triggered, thoughts that may represent billions of neurons firing all at once. Creating a pattern that you suddenly think is a word that popped into your head just now. Maybe you brought your hands together suddenly. It might be unlikely another person can predict your every action, but we are all somewhat predictable. We can predict that at about 2 years old a baby will start behaving in a very terrible way. They call it terrible twos. Your breathing is automatic, your blood flow, your growth. There are so many obvious signs that you are an automatic being. As sure as a tree we reach for light, nutrients, and resources. When were not doing that there is some information we need, it could be nutrition information, or security information, or philosophical information. We gather information automatically. Stop. Are you still thinking or reading? See automatic. Even perfect zen, perfect stillness of thought is automatic.

I understand the issue your raising however your making some terrible assumptions "you cant reduce the inner phenomenological reality" oh can't I? The you that you are isn't really an individual, it's a collective, a collective of cells, singing the song of "I am". Everything you can sense, every feeling, every concept, every experience, and thought is a prediction. What you think is you is actually a network of electro-chemical reactions, it's 100 percent reactive. There is zero control, and the only think your mind does in summary is make predictions. The concepts of choice and freewill lend themselves as predictions, means of explaining the actions of others when they diverge from your own. No balloon can choose to stop rising toward the ceiling. The only reason some balloons rise higher is that their corner of ceiling is higher. In this sense what we mistake for choice is more like altitude. As your awareness expands through life, your prediction-altitude increases, and you automatically make better choices. Literally some people are stuck thinking they are somewhat less than perfect because they are trying to hold onto the illusion of choice. Lose the illusion of choice today, it's the only way to perfection. :)

Gudmundur Helgi Helgason

http://www.wired.com/science/discoveries/news/2008/04/mind_decision

"Your decisions are strongly prepared by brain activity. By the time consciousness kicks in, most of the work has already been done," said study co-author John-Dylan Haynes, a Max Planck Institute neuroscientist.

If we are not in control of ourselves, since there is no I to be in control me (as sily as it sounds), who is in control? The universe. The whole existence is controlling it.

No wonder people get great results in the AA community when they realize that their lives can be greatly enhanced by realizing a higher power that control everything. But of course it's the higher power that decision to make the body/mind realize that.

Micah Blumberg (July 2011)

Consciousness is the news headline, the summary of a mountain of unconscious thought, the human being is just a tree, a fractal, made of cells, dna, automatically reaching for nutrients, automatically reaching for the light.

Accepting the higher power is the same as letting go of inner conflict, these are metaphors to describe an automatic energy transformation of the conscious being

There are Christian groups who are determinists (the Calvinists) there are Buddhist's who believe in determinism. (I don't know how you can be enlightened without that realization) and there are famous scientists like Einstein who believe in determinism. The majority of people in the neuroscience world believe in determinism.

Gudmundur Helgi Helgason

And the realization that you are the whole process. It's not like you as the whole has a free will, but you're simply spontaneously manifesting everything, free from everything that is happening, infinitely creative.

Micah Blumberg (July 2011)

Exactly!

a0359z

Dec 30, 2012

(field, synap, category theory) Can Category Theory be applied to the process of psychological categorization?

Can Model Theory be applied to the creation of mental models?

Ivan Pierre

Simply held, complete nervous system can be viewed as a modular monoidal recursive map-reduce... Simply held....

Ivan Pierre

In a same way, I like to see memory, as a closure in pure functional way the neurons interact through monoids of class endofunctors (neuronal signal->neuronal signal). Leads us to category theory...

Juan Carlos Kuri Pinto

I would like to learn everything about the high-level aspects of Haskell:

<https://www.facebok.com/groups/programming.haskell/>

Ivan Pierre

I'm not working with haskel now but with clojure. Anyway it's the same concepts. I put my current readings : <http://www.facebok.com/Psychaitrie.pour.programmeurs> on programming and <http://www.facebok.com/InformatiqueCognitiveEnChantier> on cognitive computing. Both mostly in English. But it's just my two month in walkin' through the subject. So, it's eclectic, but grab at will

Ivan Pierre

On the mind problem, I'm focused on the bayesian model. But anyway, it's a multidiciplinary problem....

Friday at 10:31am · Edited · Like

Yan King Yin

If you think more abstractly, you may discover that it is not necessary to build AGI with a reference to neuronal mechanisms... hence my more formal-logic based approach.

Friday at 11:33am · Like · 2

Ivan Pierre

Yes, it's right. But I'd like to encompass the actual data from various other fields, as they have to account themselves. I think for example Tannenbaum and Dehaene in experimental psychology and Brain/mind works. It's clear they record a general behavior...See More

Friday at 11:59am · Edited · Like

Juan Carlos Kuri Pinto

If you think more abstractly, you may discover that neurons are parts of objects and axons are relationships between parts of objects.

Friday at 9:25pm · Unlike · 1

Micah Blumberg

You can also flip that and make the axons and axon firings as the objects, and the neurons as the morphisms with identities between axon firings objects.

Friday at 10:36pm · Edited · Like

Ivan Pierre

Yes, That why I thought monoids, but not with identity, with state. Viewing synapse as an addition function with release of the potential at some cutting edge. And lowering the edge for each discharge, and another function highering the edge with time.

...See More

19 hours ago · Edited · Like

Micah Blumberg

The frequency of firing is not important, but the timing order is important, when the frequency is altered, the timing of firing is changed. This is the difference between a neuron contributing to the recognition of a pattern, and not contributing to the recognition of a pattern. Have you read "How to create a mind" by Ray Kurzweil?

19 hours ago · Like

Ivan Pierre

Not yet, I have it in my future readings...

18 hours ago · Unlike · 1

Yan King Yin along this thinking, each neuron can only recognize 1 feature (which may be micro or macro), for example the concept of "grandma". How can a neuron achieve generality? (Eg, the generalization of all grandmas.)

Another problem I find with the neural approach is the need to evolve large-scale organization, ie, the configuration of networks to achieve complex behavior. That aspect is little studied (at least when I looked into it several years ago....)

17 hours ago · Like

Micah Blumberg

The neurons don't represent single features, the features are in patterns, trans-neuron

16 hours ago · Like

Yan King Yin

Hmmmm I don't get your explanation.... the features (recognized by neurons) can get more and more abstract as you go up the hierarchy, but that would imply a very tall hierarchy, and seems implausible in the brain (it may also be impractical for AGI). Perhaps there is some special mechanism in the brain to allow neurons to generalize like logic formulas with variables...

15 hours ago · Like

Micah Blumberg

Neuron's are like piano keys, or perhaps like pixel's, when they fire they can belt out a recognizable pattern, when they are inhibited the tune may or may not be recognizable, but another set of neurons can create the same pattern, because the pattern is neuron agnostic, just like you can play a recognizable jingle with different keys on the piano, or different pixel's on the screen.

15 hours ago · Like

Micah Blumberg

This whole concept of pattern recognizers is the main subject of the book "How to create a mind" by Ray Kurzweil.

15 hours ago · Like

Yan King Yin

How is it different from the traditional feed-forward model? Researchers claim they can recognize invariant patterns, but in practice it still appears impractical, and has not been conclusively demonstrated.

15 hours ago · Like

Micah Blumberg

It's different for several reasons, among them the neuron is no longer the core computational device, a module, which is a group of 1000 neurons or more is the core pattern recognizer. It's also not exclusively feed forward, patterns feed forward, and ...See More

15 hours ago · Like

Micah Blumberg

Patterns are invariant, because a pattern is a sequence of bits, and a variant of that pattern is a slightly altered sequence of mostly the same bits.

15 hours ago · Like

Micah Blumberg

Like a song is a sequence of bits (pressed piano keys) and a variant on the same song is a slightly different sequence of mostly the same piano key sequence. The similarity to the previous variance is built into the pattern recognition sequence.

15 hours ago · Like

Ivan Pierre

Ok, I begun reading the book. Well, I see with his background that pattern recognition is his 'dada'. Well, I'll finish it before saying any more.

What makes me wonder. In neurosciences, I allways find that they seldom extend more than the result the hypothesis, and even look for procedural failures.

I liked to read some of Tennenbaum on the subject, and he is quite strict on procedures :

<http://web.mit.edu/cocosci/josh.html>

Ans if you understand French some of Dehaene :

<http://www.college-de-france.fr/site/stanislas-dehaene/>

Josh Tennenbaum's home page

web.mit.edu

Email: jbt AT mit DOT edu Phone: 617-452-2010 (office), 617-253-8335 (fax) Mail: B...

See More

15 hours ago · Like

Micah Blumberg

When inhibition fails, as it sometimes does in a human's brain, you could fail to recognize that you are looking at a new pattern, and instead mistake a new pattern for an old pattern. This is why caffeine is so useful, in triggering the inhibiting act...See More

15 hours ago · Like

Yan King Yin

How do neurons in that model recognize temporal sequences? That would require some sort of recurrence, no? Last time I studied them, it seems that evolving large-scale recurrent networks are too complex to tackle...

On the other hand, if you don't have recurrence, you can't recognize temporal sequences, and must rely on very tall feed-forward hierarchies.

15 hours ago · Like

Micah Blumberg

You should check out the book, because I think I explained it already, but obviously my words do not mean the same to me as they mean to you because my words reference an entire book to me, but it's not plausible that I can explain an entire book to you in a short q&a

14 hours ago · Like

a0360z

(emotion, dipole)

can the brain sense it's own magnetic dipoles? I argue yes, we are doing that, but we may not have the context to understand what this is.

the brain separates pattern types, sensory input patterns have their own paths, subcortical muscle pattern inputs have their own neural paths, the effects of dipole activity that crosses the whole brain is going to be a distinct pattern class because it is a pattern that the whole brain can detect that has different properties from other types of brain signals and is counter intuitive pattern knowledge, I think people might call these high level emotional intuitive abstractions or intuitions or feelings or emotions with some variation in the types (electric dipoles and separately magnetic dipole activity both ought to be recognizable by the brain on a global scale. In terms of

a0361z

About info for the Self Aware Networks Institute

Company Name

The Self Aware Networks Institute

Product Name

Sentient Self Aware Neural Networks

Application Track

Rising Star

Funding Stage

Series A

Company Tagline

The Self Aware Networks Institute for Neurophysics, Artificial Neurology & Bio-Synthetic Interfaces researches & develops core technologies, plus the security of these core sentient self aware artificial neural network technologies, and brain computer interface technologies. This work is based on the study of biology & computation & has broad application serving essentially all industries.

Company URL

<https://selfawarenetworks.com> and <https://selfawareneuralnetworks.com>

CEO Name

Micah Blumberg

Year Founded

2021 (work began in 2012)

Describe your technology, product, or solution in brief.

The Self Aware Networks Institute was founded to research & develop Biological & Synthetic Qualia (Internal Representation), the Neurophysics of Phenomenological Consciousness, Imagining technologies to monitor, treat, communicate with Bio & Synthetic Neurology, Bio-Synthetic Interfacing, and Medical Research. Our technology has broad application beyond these original goals.

What need gap is your technology filling?

Next generation artificial neural networks capable of advanced operations that require conscious deliberation. Beyond human level learning from video, next level automotive driving machines & flying machines, atmospheric filtration systems to solve climate change, robots to clean the oceans & restore coral reefs, biology research for advanced medicine, a medical justice system to prevent war crimes, machines that can grow food & build homes

What are your differentiators? I.e: What is your superpower that makes you feel that you should win?

The Self Aware Networks Institute offers a completely unique & novel strategy for designing next generation neural networks that scales beyond the known limits of deep neural networks.

What studies have you done to demonstrate economic and clinical ROI? Please provide a synopsis of them including size of cohort

We do not yet have funds for studies on economic & clinical ROI, but there is plenty of science fiction about the value proposition of sentient robots that can give the judges some idea.

Please list your top 3 to 5 customers

Government, Corporations, Billionaires, Individuals & Sentient Robots.

What are the next opportunities for your company?

3D neural networks to clean earth's atmosphere & oceans, space colonization, asteroid mining.

a0364z ctp

(oscillat, array) cosmos neural network

while the universe has many of the properties of a neural network, depending on how we define the word conscious, a word first elucidated by *Decart, meaning to know, we can argue that the cosmos is not intrinsically conscious because "to know" is to render a certain kind of pattern that is in essence a recoding of decoded signals in the brain.

Basically the principles of neural coincidence detection (to dive deep into this topic I recommend "The Neural Basis of Freewill: Criterial Causation by Peter Tse"), which is another way to think about Hebbian learning (similar to the idea that neurons that fire together wire together, and similar to the physics of oscillation where oscillators attract other oscillators and form clumps, and eventually an entire array of fireflies is oscillating in sync reference the book Sync by Steven Strogatz.) can apply to any material in theory, so a planet could be a coincidence detector, or a pattern detector that learns through its physical configuration to be more responsive to some patterns and less responsive to other patterns, this means that yes the entire cosmos could be a neural network, on a scale that is vast spatially & temporarily, but planets oscillate, earth oscillates, spacetime is imagined to be a harmonic oscillating field, and signals (light) travel between planets, stars, which is about what you need for the cosmos to be a giant neural network, albiet on difficult to imagine scales of time & space.

The Real Matrix: Physicist Says Our Universe Is Likely a Neural Network

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

to understand this we have to compare and contrast the heart and the brain

the heart also consists of oscillating nerve cells, with cyclic firing patterns like the brain, but the heart is limited or rigid in its signal pattern complexity, because its network of cells consists of mostly excitatory feed forward looping activity that has a low pattern divergence

where as the brain, see Rhythms of the Brain Figure 11.5 has a high number of possible signal patterns that emerge because inhibitory neurons act like train switches, "choice bifurcation" is the word, diverting the paths of incoming signal transmission resulting a vast array of possible pattern learning that is many times greater than the level of detail that could be rendered by a human heart.

It makes sense why we can replace a heart with a pacemaker, but not a brain with a pacemaker, whatever the human heart is potentially rendering its information complexity is miniscule enough to be replaced with an artificial pump

Closing the mechanistic gap: the value of microarchitecture in understanding cognitive networks

[https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(22\)00158-9?dgcid=raven_jbs_aip_email#.YuTn1ADdYqY.twitter](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(22)00158-9?dgcid=raven_jbs_aip_email#.YuTn1ADdYqY.twitter)

Enhancing Backpropagation via Local Loss Optimization

<http://ai.googleblog.com/2022/07/enhancing-backpropagation-via-local.html>

Neural correlates of a decision in the dorsolateral prefrontal cortex of the macaque
https://www.nature.com/articles/nn0299_176

Bifurcations of paths in the interneurons multiple the complexity of phase variations that you might see in excitatory networks, which might be good at predicting curves or shapes over time as signals are modulated with subsequent distances (in the excitatory sensory input pathways) but the bifurcating interneuron pathways would be useful for higher level abstraction, non-linear concept formation.

a0365z

May 16, 2012

(inceptive field, inhibition)

my cells are rewarded for learning a pattern, learning a pattern means I am part of the most efficient pathway for a signal to travel, it means live, cells live and continue to live by detecting patterns, and reflecting what they learned accurately to other cells. I just want to touch where the light is coming from, that is the basics of aware life at the neuron level.

The neuron is a fractal of the man in that sense. With its own inner sense. That it is doubling by every neuron that it syncs with

maybe the calcium receptors in the dendrite are responsible for maintaining the tonic firing pattern. but then I need to show, hmm. inhibition with extra k release still makes sense.

the granule cell goes across the dendrites of the pyramidal cells, connecting perhaps several times, which is interesting because their noise within one particular neuron can be increased or decreased simply by the number of connections, but the potential amplitudes & frequency combinations are multiplied with every additional synaptic connection, or divided by each synaptic connection, so a loss of one synaptic connection would make that granule cell quieter in the array,

the key is that its inceptive field

1136 "Actually, I just woke up one day and decided I didn't want to feel like that anymore, or ever again, so I changed. just like that" source unknown. To me it represents a shift that is the new dominance of a new voice that represents a new dominant neuropattern among the nerve cells that fire in the brain.

Given the complexity inside brains versus the complexity of the whole cosmos outside brains, you might think of the cosmos as a small part of your brain, instead of thinking of the brain as a small part of the cosmos.

the oscillation of the magnetic field configuration on the brain from the brain is going to be felt by the brain as areas of increase ATP release as the mitochondria are stimulated by the flavin sensitivity to electromagnetism in the brain, so the output of neurons can change the magnetic field, and they can sense the magnetic field because they have flavins in the nerve tissue and the mitochondria flavins are in particular stimulated by electromagnetic field changes.

Tags:

choice,

a0366z

Note Created Nov 2, 2013

(neurotransmitter, hippocampus, LTD, graph, dendrite, synap, cortex)

Dean

"If the information structure remained the same, then you would not make any new memories." I believe, you misunderstood me (or I wasn't clear).

By informational structure, I'm referring to the "concept" that the configuration represents. After repeated occurrences of the same patterns over time, these concepts become imprinted within the structure of the neuron via LTP or LTD.

Over even more time, these "concepts" (with help from the hippocampus) get associated with other neural structures in various regions within the neocortex forming our long term memories. A single neuron is quite capable of storing an enormous amount of information (or memories if you prefer) via the mechanisms I outlined above. It does not have to wipe any current information out in order to store new information.

(Note: I'm using the term "information" rather loosely here to refer to the specific configurations of synaptic receptors, neurotransmitters, etc. at the point the information is encoded - refer to STDP [Markram et al] for additional details).

Micah Blumberg

Each "repeated" occurrence is a tiny change in the whole structure of a neuron. So if the total amount of bits that represents the whole electrical acoustic topography of a neuron were X , then with each new "memory imprinting occurrence" is like $X + 1$. It doesn't matter at all that the overall structure is largely the same, because the SDR snap shot is going to be subtly altered because of the increasing changes to X as a whole. Including the synaptic changes, and the dendrite changes.

So I did not misunderstand you, and you were perfectly clear.

I'm considering the tiny changes of dendrites, and synapses, and micro-tubules, and proteins, as alterations to one memory that is in the form of a complex shape with a complexity that is at least X , and $X + 1$ for each new interaction. So that each cell is a spatial-temporal memory, as a whole structure, every part of that structure is integral to its output pattern. Therefore it communicates (an SDR or snapshot) its own ever subtly altering shape when it fires in one simple burst.

The single burst of a neuron has to contain an SDR of the whole information, from the whole shape of the neuron, including the dendrites, and synapses, and proteins, OR else, you have to imagine the explosion of the neuron being independent from the dendrites, and or synapses, and or proteins. If it doesn't communicate an SDR of it's whole shape, that would be like not sending the data in the synapses, and not sending the data in the dendrites. That data has to come together when the neuron fires, in a single message. What would happen if you stored the data at one end, but didn't send the data out at the other end?

What if your dendrites only collected data, but never transmitted it? What if your synapses only collected data, but never altered the pulse that went out when the neuron itself fired?

If the neuron is X, and the dendrite registers a +1, then the whole topography of the neuron is X+1, but if the neuron fires and transmits X then it would be as if the dendrite did not register +1. The only way the information gets passed on is if when the neuron fires, it transmits X +1. ie it's topoi, an SDR (snapshot) of it's shape.

Potentially this means you could fit an entire computer program into a single electrical pulse.

Dean

What you are describing might be an interesting exercise in creating an alternative spiking model ANN, but again, as a theory of how the actual biological brain operates, it has some problems (IMHO).

Information is encoded within the brain not as individual spikes, but rather as spike trains - temporal patterns of firing - I don't see where this is accounted for in your theory.

Also, it ignores the role of extra-synaptic mechanisms (glia cells, ephaptic coupling, extrasynaptic receptors, etc) and there is strong evidence that their roles are quite significant in developing a complete framework of computation and communication within the brain.

There is a theoretical model being pursued by Dorian Aur (postdoc at Stanford) called NeuroElectroDynamics (NED) that eschews the orthodox view of a temporal spike timing model and rather, promotes a model based on the shape and direction of electrical charges as being the basis of information encoding. He has some interesting evidence to support his ideas, but has not gained much traction from the neuroscience community. It does contain some elements that are similar to your ideas, so you might want to check it out.

<http://neuroelectrodynamics.blogspot.com/p/spike-directivity.html>

3 minutes ago · Unlike · 1

a0367z

May 13, 2011

(electromagnetism)

do you know what a dissipative system is? it's a vortex, it's a human body, like the sun, the spiral galaxy, like the atom, what is the hand that sculpts dissipative systems?

electromagnetism? gravity? spacetime? so why does the Sun seem to endorse Moshe?

<http://www.youtube.com/watch?v=QQ-kvw1fYXs>

do you know what a dissipative system is? an atom?, the earth is one, the sun is one, even galaxies can be considered to be dissipative systems, <http://vimeo.com/7736549>

the sun is a dissipative system, and so am I, as above so below, as thy am, so I am.
<http://www.viten.com/nyviten/renard.htm>

I suppose dreams are like art, you can appreciate the surface beauty, you can decode them as psychological metaphors,

, some cultures saw them as future predictions, and I even read of a clever science experiment once where they deprived a rodent of it's dream state, while still allowing it to sleep, and they discovered that it didn't have fear, it walked around next to a cat with no fear. None of the usual instinct that cat's are scary. So a hypothesis is that dreams prepare us for day, giving our minds the information we need to steer clear of danger.

human life is a dissipative system, (a vortex) the same as all life, the same as tornados, hurricanes, same as cells, same as planets, same as stars, same as galaxies. Have you seen pictures of galaxies merging? yes it takes a very long time, and the same physics is at work on lovers

now I want to encircle all of my comments and put a "maybe" I'm not saying that's how it is, it's just an idea of how it could be

On second thought the monogamous pair might have far greater density of love than the groups of people who sleep around but never stick to anyone in particular.

a0368z

Dualism is a map of reality, framed in polarities, and its not an illusion, but its also not the territory.

Even if dualism is not an illusion, your map of reality is missing exactly half of the story if you stop at the individual as the source of what he does.

Go inside that individual and you will find the source of what he does is the same physics that shapes stars and planets, he is one with all that is, and that non-duality is the only real actor.

A non-duality merged with the dualism that is the map in your mind makes the map an organic thing like a tree.

The mind grows like a tree, your thoughts and movements are its roots and branches.

You can choose all day, but I will know the truth, that your brain is growing your choices.

You are a tree who has dreamt of free will and dared not to dream that your thoughts are inseparable from the same physics that entangle particles and hearts alike.

a0369z

New: Quantum Gradient Time Dilation note

I wonder if I could make a phone that uses quantum teleportation via (altering temporal) oscillations, via quantum entanglement, work.

Connect a0018z note with a0258z note and a0369z on Quantum Teleportation.

"A 'beyond-quantum' equivalence principle for superposition and entanglement"

"In particular, the team showed that a certain popular quantum cryptographic protocol, known as "BB84," will always work—even if one day it is found that quantum theory is not fully correct, and needs to be replaced with a more fundamental theory."

<https://phys.org/news/2022-05-beyond-quantum-equivalence-principle-superposition-entanglement.amp>

Essentially the air is an oscillatory pattern for particles, and the walls are different oscillatory patterns compared to the air, but

if I am thinking about something like the magnetic field of the earth as a kind of oscillating body like the air, that represents a lot of tiny oscillations that are aligned in a really big long slow magnetic wave, then I can picture how an oscillation of many small quantum parts adds up to a big oscillation in area effect, one that could transfer information between two entangled particles like a giant electrical wire inbetween them.

Technically the oscillation of each particle is shifting all the other oscillations in space, but somehow it's that one particle that it's entangled with that is affected at a distance.

It's kinda like the first entangled particle has a unique frequency pattern <1 , spacetime has a 0 oscillation in sum, and the second entangled particle has a matching frequency pattern to the first particle <1 .

Essentially I think that with Quantum Gradient Time Dilation the particle field is like a clumpy energy oscillation, with the particle representing some valence of energy that is producing it's own spatial area that is it's frequency, but the point of an electron is going to leave a magnetic wave shape in the sense that the electron is like the faster beta frequency, and the magnetic magnitude wave it creates is like the slower theta frequency that higher amplitude & greater area effect.

When you accelerate electrons I would expect the frequency of the magnetic field they create to increase, but if that happens the magnitude of the magnetic field ought to decrease.

at somepoint if a magnetic wave increased in frequency enough it would resemble an electron in size.

If the fabric of spacetime can be imagined as a single large wave, then it's scale, it's magnitude, and it's frequency are connected.

If there was such a thing as the ever present now moment, an eternal moment that was in a sense always the beginning of time and always the end of time, that moment would be like a wave of almost infinite area, but in exchange for having massive area it would be mostly devoid of recognizable features, it would be a void of space in aggregate, because of the relationship between magnitude & frequency in this fractal cosmos.

Suppose though that the void of space really was like a wave that never had an oscillation, that would make it a bad point in a harmonic oscillator (Bad Point is a reference to the discussion of Bad Points in Steven Strogatz's book Sync), or a point that has no area, or a point that is never occupied, never filled up.

So if something is (at least temporarily) like a bad point, that means that harmonic oscillations skip over it, which is, going back to this idea:

"It's kinda like the first entangled particle has a unique frequency pattern <1 , spacetime has a 0 oscillation in sum, and the second entangled particle has a matching frequency pattern to the first particle <1 . "

suggests that if space has no real area, if the void of space is like a bad point in a harmonic oscillator, at least temporarily, then harmonic oscillations that do exist will skip over it.

It's like energy has to move somewhere, but if it can't move into the void of spacetime then it has to keep protruding from space time as an energy valence.

It's like saying that the void of spacetime as a quantum structure requires in the polarity of it's energy architecture the pushing out of energy valences, or diverging frequencies with volumetric magnitudes as a consequence of it's structural formation.

It's looking like spacetime doesn't have a beginning or an end, but that entropy & extropy are both always increasing, with no resting point, as inevitable consequences to space having no intrinsic area, just temporally existent or a virtual area that is at the same time a volumetric frequency.

a0371z

(hebb, tomography, cereb, cortex, semantic) FNIRS Functional Near Infrared Spectroscopy
The Neural Lace Podcast Season 2 Episode 4

This podcast was recorded just over a week before Jonathan Toomim will give a talk about FNIRS at NeurotechX in San Francisco at the Red Victorian Experimental Hotel.

To learn more about FNIRS in this podcast I spoke to Jonathan Toomim who was in a valid sense grandfathered into it. His grandfather, the late Hershel Toomim and Robert Marsh were awarded the US patent on HEG Hemo-Encephalography in 1999.

What can neurotech enthusiasts and neuroscientists do today with FNIRS?

Answer: Biofeedback, and pure measurement (like a poor man's FMRI.)

Some of the references we made in the podcast:

1. Mary Lou Jepsen's Openwater talk at the Long Now

<https://www.youtube.com/watch?v=4QcLcgcYnpg>

2. Reconstructing speech from the audiocortex:

"When people speak, or even just imagine speaking, telltale patterns of activity appear in their brain. That is already known knowledge from decades of previous research. What they've also found by now is that distinct, but recognizable, patterns of signals also emerge when we listen to someone speak, or imagine listening.

"Therefore, speaking, imagining speaking, listening to someone speaking, or imagining listening, all produce a pattern of signals. Experts through the years have tried to record and decode these patterns. They see a future in which thoughts need not remain hidden inside the brain—but instead could be translated into verbal speech at will. Although it was one thing to theorize doing this, it was another thing altogether to actually do this. The feat was much more challenging than expected.

"Dr. Mesgarani is an associate professor of electrical engineering at Columbia's Fu Foundation School of Engineering and Applied Science. At first, to decode the brain signals, he and others focused on simple computer models that analyzed spectrograms – which are visual representations of sound frequencies."

<https://www.intelligentliving.co/thoughts-audible-speech/>

"Towards reconstructing intelligible speech from the human auditory cortex"

<https://www.nature.com/articles/s41598-018-37359-z>

3. Highly Spatial EEG from Switzerland and Germany: "Now, scientists at the University of Geneva Switzerland in collaboration with Cologne University (Germany) have investigated whether a non-invasive method – electroencephalography (EEG) – could be employed in tandem with mathematical algorithms to measure this brain activity externally.

"For the first time, they proved that this technique is able to record signals usually only seen by implanting electrodes in the brain.

"Using the technique, scientists were able to quantify and record the electrical activity of the subcortical areas of four OCD and Tourette's patients who had been given electrode implants.

While doing this, patients were equipped with an EEG as the scientists measured the activity of the same areas from the surface."

<https://www.techexplorist.com/gentle-method-unlock-mysteries-deep-brain/21231/?fbclid=IwAR3HPPRuBUUc617f9MxIV9NHB6HJ-f3k9WntYhmkHQfFKU3fi7ZUw8YMPTg>

4. Hebbian Learning https://en.wikipedia.org/wiki/Hebbian_theory

5. Predictive Coding https://en.wikipedia.org/wiki/Predictive_coding

6. Jeff Hawkins Cortical Column's behaving as Gridcells for items in the world (and more) references

<https://numenta.com/resources/videos/jeff-hawkins-human-brain-project-screencast/>

<https://numenta.com/neuroscience-research/research-publications/papers/a-theory-of-how-columns-in-the-neocortex-enable-learning-the-structure-of-the-world/>

<https://numenta.com/resources/videos/thousand-brains-theory-of-intelligence-microsoft/>

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About the talk:

On February 16th Jonathan Toomim will give a talk on Functional Near Infrared Spectroscopy at NeurotechX hosted by the Red Victorian in San Francisco

Jonathan Toomim, who is a Neuroscientist by training, will talk about brain computer interfaces and more, specifically he will talk about FNIRS: Functional Near Infrared Spectroscopy, a product that he built in 2014 before he started getting involved with projects like Xthinner and Blocktorrent

Here are some interesting links about Toomim that may give you an idea about some of the interesting projects he has been involved in.

Excerpt:

"Hemo-EncephalographyIn 1999, the late Hershel Toomim and Robert Marsh were awarded the US patent on HEG. HEG uses light to observe blood in the brain through the skull.In 2009, Hershel Toomim and I had the opportunity to discuss the wave. Had he seen it using HEG? His answer was, that he had looked for it, but "No", he had not seen it. His thinking was that for cerebral homeostasis, the brain micro-manages blood flow, normalizing the wave.

"Hemo-EncephalographyBut could it be a matter of filtering, i.e. very low frequency signals were being excluded? (The way we were able to see the wave plethysmographically was by eliminating the low frequency filtering of the state-of-the-art heart rate variability instrument.)Hershel and I agreed to consider it..He passed away in 2011 at age 95.

"This year I learned that Jonathan Toomim, Hershel's grandson had continued his HEG research. I connected with Jonathan via Skype, and learned that he had developed a research instrument without filtering."

https://coherence.com/Breathing_Blood%20Flow_And_The_Brain_Production.pdf

<http://jtoomim.org/>

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We meet to discuss ideas related to neuroscience, brain computer interfaces, deep learning, software development, we host talks, and we have hacknights where people can come and work on neurotech related technologies.

In general the NeurotechX group of San Francisco has its focus divided between a few different key topics which are all in some sense related to the research and development of neurotechnology: Medical imaging technologies including brain machine interfaces, brain computer interfaces, and software development around brain computer interfaces including spatial computing like VR, AR, WebXR, and also Deep Learning as applied to 3D volumes of data, and as applied to medical imaging.

This year 2019 we have pledged to spend more time studying Deep Learning on 3D Point Clouds. The goal is to study how to do semantic segmentation or object segmentation on 3D data such as point clouds, voxels, meshes etc that might be collected with lidar, RGBd cameras, fMRI machines, FNIRS functional near infrared spectroscopy, openwater (Mary Lou Jepsen's technology), EIT (electrical impedance tomography), or new highly spatial EEG (reference: <https://www.techexplorist.com/gentle-method-unlock-mysteries-deep-brain/21231/?fbclid=IwAR3HPPRuBUUc617f9MxIV9NHB6HJ-f3k9WntYhmKHQfFKU3fi7ZUw8YMPTg>)

Applications: In short semantic segmentation of 3D data allows (for example) a vehicle to identify objects in the environment and separate out which pixels belong to that object and which do not. Object segmentation has been used to make advanced neural correlations in fruit flies to fruit fly behavior captured with a high speed camera.

https://www.hhmi.org/news/artificial-intelligence-helps-build-brain-atlas-fly-behavior?fbclid=IwAR0ectGUfE9vgnWp4gac1H-UyYCWeG9h2Q737M52I0_IqyC2SEclKH7gtws

Other applications can include recognizing spaces, planes, edges, and objects for augmented reality and virtual reality applications, such as the ability to re-skin the couch in your space so that it appears as a wall in VR.

In January of 2019 we were inspired by a talk given by Or Litany <https://orlitany.github.io/> to shift our focus onto deep learning in a significant way. Previously our group met to work on connected EEG to VR via an implementation that involved this group learning how to develop WebXR with AFRAME, three.js, and pipe the EEG signals to the webpage via a web-socket,

needless to say we were successful and now we are changing our focus to accomplish something bigger.

This group is interested in Pointnet <http://stanford.edu/~rqi/pointnet/> and in 3D cross hair convolutional neural networks
<https://medium.com/silicon-valley-global-news/3d-cross-hair-convolutional-neural-networks-5d39e2b565ca>

Previous examples of our work with EEG and VR:
<https://photos.app.goo.gl/5XsrPcEeVdUmVt9t6>

Here is older video of the Neurohaxor WebXR, EEG, FFT, Scatterplot/spectrogram project running in WebVR from 10.25.2018
<https://www.faceobok.com/worksalt/videos/2467372666622699/>

This was our original event description for Neurohaxor code nights
<https://medium.com/silicon-valley-global-news/neurotechsf-sf-vr-360-noisebridge-91a34d788a5d>

The story so far:
<https://medium.com/silicon-valley-global-news/noisebridge-went-to-the-maker-faire-in-this-article-you-will-learn-about-ngalac-the-93f4857d3014>

Watch the Neural Lace Podcast Season 2 Episode 1 NeuroTechX and OpenEIT
<https://youtu.be/aexQwTpOwYc> with Jean Rintoul to get the big picture vision of what we want to accomplish.

Also watch the Neural Lace Podcast S2 E2 with Jules Urbach <https://youtu.be/yMsaNsqzjFQ>

Previously: We made significant progress at the July 29th, 2018 meetup: We were able to cause voltages from the skin to move objects in WebVR.
<https://www.faceobok.com/worksalt/videos/2332211350138832/>

Other links including the Github and our online groups:
[https://medium.com/@vrma/list-of-links-from-neurotech-sf-vr-on-8-31-2018-7a80cfd3901b](https://medium.com/@vrma/list-of-links-from-neurotech-sf-vr-on-8-31-2018-7a80cfd3901ba0372z)

a0372z

The original note was Feb 22, 2014, but I made some recent modifications (June 2022)
(synap, cortex, field, decoherence)

Hierarchical Temporal Memory was this idea that the neocortex was a hierarchy that gave it the advantage of instant associations, just like Content Addressable Memory
http://en.wikipedia.org/wiki/Hierarchical_temporal_memory

Hierarchical temporal memory - Wikipedia, the free encyclopedia
en.wikipedia.org

To visualizing that quote, imagine a series of tesla coil pitch forks which resonate according to the acoustic density function. as the electromagnetic wave travels from one coil (pitch fork electrodes essentially) to the other, they will either resonate with the next fork in the network depending on the factors that determine wave resonance, or they will not.

If they do the next fork electrode can carry that signal to the next and so on, even amplify it. now think of each fork representing a "transistor" which if the fork vibrates due the prior in the series it represents an on, or excitatory. if it doesnt, the signal traveling doesnt resonate the full network of forks, so the ones that dont are inhibitory to the signal coherence of the information, whether encoded by the on/off analogy or the actual frequency variations

Synaptic inputs can increase or decrease the membrane potential, potentially causing an action potential that has a variable magnitude(duration) and frequency, that effects the membrane potential of another synapse

in comp neuro, and in many AI models, they simplify so that all action potentials are equal, and they only take into account the frequency of the spike.but the (shape of the Action Potential wave, via its duration) matters, because that impact is going to determine how much the next synapse's membrane potential is going to be effected, which critically is going to effect it's firing frequency and magnitude also

I was at a place. I was imagining the place was made up of spiking bursts of wave frequencies, some firing alternately, and some firing in coincidence. Where there was nothing, that was a coincidence of synergistic firing, resulting in the inhibition or absence of information in my visual field.

Where there were alternating decoherent firing patterns resulting in the excitation or appearance of visual patterns such as lines, edges, colors, people, shapes, and details in my visual field. The only problem with this idea is that electric spikes do not see, something has to read them. They are messages sent through neurons from one synapse to the next.

What sees the wave frequencies are each subsequent set of neurons in the exit terminals of the previous row of neurons.

a0374z
note from May 2017

<https://medium.com/silicon-valley-global-news/gti-2017-gpu-technology-conference-the-neural-lace-podcast-5-with-guest-jules-urbach-the-ceo-of-17c4067a648e>

(field, graph)

holodeck players
cars
isaac

inside volta
homomorphic encryption

Jules Urbach is the CEO of OTOY, Inc a company that offers products like Octane Render, Lightstage, Orbx. As a company OTOY really wants to build whatever it takes to get us to the holodeck. The mission for OTOY is to build the software stack in places where there are efficiency barriers.

Urbach has been a pioneering force in the development of holographic capture, extremely high resolution graphical rendering, to making it possible to stream these live high-resolution lightfield gpu rendered graphics over networks to your Gear VR or Hololens or Tango. He has worked with facebok to help them build out a cloud render pipeline that turns the data from faceoboks new 6 degree of freedom cameras into volumetric video that you can share on your faceobok timeline or jump into with vr, and what's even more amazing is not only can you walk around inside volumetric movies on a mobile phone that look better anything on current desktop VR systems, but you this data slips seamlessly into game engines like Unity so you can define a volume of space that you want to make interactive in unity and drop the Orbx point cloud into that volume so it becomes an interactive movie.

The technology he is making is in a sense is making it possible that particular scene in Ready Player One https://en.wikipedia.org/wiki/Ready_Player_One when Wade has to go into a Virtual Reality re-creation of Wargames (1983) that is so photo-realistic that he gets to stand next to Matthew Broderick's character who also looks photo-realistic, and then he has to interact with the movie because the movie itself is now fully interactive.

These are the types of experiences we will have in the next couple of years.

I spoke to Jules to learn more about streaming light field over web vr, and we also talked about Neural Lace and speculated on what it might take to pipeline graphics directly into the brain.

Note to self: Link to the Neural Lace Podcast discussions with Jules Urbach here:

a0377z

Jan 15, 2011

(cortex) Friends my awareness is the size of a dinner napkin, yes because it takes place within the Neo-cortex which is the size of a large dinner napkin you get at the nice restaurant, all folded up on top of a reptile brain. However there more connections inside this napkin, than there are stars in the entire visible universe. This allows me to model the entire universe using only a portion of this napkin, this is how I can perceive that I have a body, that is sitting in a room, or walking down a street, the room and or the street are an idea that is being replicated in

my mind with enormous detail. Every detail, from the idea of a room, to the idea of a tree, to the idea of what a tree is made out of, to the idea of quantum particles, it's all predictions that I perceive as geometric metaphors.

my eyes make a visual metaphor
my ears make an audio-spacial metaphor
in both hearing and sight I perceive a space
a three dimensional space
my nose make a smell metaphor
my tongue makes a taste metaphor
in both smell and taste I perceive a space
everything I know, from feeling, to all my senses, is written in my mind as a spacial metaphor
All my thoughts are encoded in the language of revolutions per moment
they are all predictions at the tiniest scale [See More](#)
the mind is simple because it's just one simple pattern repeating infinitely, it is a fractal of itself, that is the reason awareness exists, it's a vibrating memory, the memory is an adaptation to the vibrating surface of the earth, and all that occurs on it's surface.

light vibrations, audio vibrations, feeling vibrations, the individual vibrations of particles in the nose, the vibrations of that which you taste, the vibrations of the heart

since there is only this vibration at one level of perspective, we can become aligned with anything we want, by vibrating at the frequency that matches what we want.

we summoned the existence of everyone in our lives, and at the same time they summoned us, because I am all people, acting as one being, where ever there is heart ache acceptance is waiting to occur, self acceptance, of the one being, our creator, do you feel right in your heart? without all of you I could never be complete,

Go with love from the greatest highest being in the entire universe.
He that loves

I am grateful we are here, that we are always here

this is what I am grateful for
this place
is always here for us I mean
waiting for us on a moments notice
summoned with a thought
and banished with a thought
as we choose

omnipresent
always knowing

ready to receive us home

my heart is where I am
my heart is next to yours,
my heart is with all my friends

When you succeed, I celebrate!
Your hopes and dreams are important!
I am someone who wants to see you win!

Go for your goal! Make what is important to your focus!
May wisdom come to each and everyone of us.
May your decisions be considerate, respectful, and loving.
My I honor that which is, and live with my whole heart.

a0378z

(field, observer, qualia)

I don't like the objective/subjective framework when discussing qualia, it's useless. Instead of the term subjective I use predictive, still has the "ctive" sound, and probablistic.

To do qualia in math I think you have to combine the ideas of Douglas Hofstadter with what we see in brain scans.

Think of it as a brain structure A of sensor chips sensing another brain structure B that is also sensor chips sensing another brain sensor structure C that is also sensor chips... until N before looping back around to A.

Then think about the components of the canvase of consciousness, the objects represented by sensing circuits (nerve cells) and brainwaves from the things in your visual field being sensed by other mathematical abstractions in your brain, like a sensor construction of an idea of an observer self.

Imagine that the apple you see, in the mind, is actually sensing what's next to it, the apple is seeing you, the table is seeing the computer, the ceiling is seeing your thoughts right now.

The loop of inner seeing gains structure because it cycles through the same big structures over and over again.

a0379z

(graph)

In the Neural Lace Podcast: Episode 3 Realizing Neural Lace

In this episode we talk about how the Nvidia DGI-1 Super computer can be used to solve Neural Lace.

Guest: Eric Matzner doesn't just study neuroscience he lives it working through his nootropics company NooTroo on a quest to enhance the human brain.

We talk about how technology being developed by Richard Marks at PSVR can be used to solve Neural Lace.

We talk about HypeVR's VideoGrammetry as a tool to solve Neural Lace.

We talk about new kinds of Tractography, diffusion tensor imaging and we touch on tensor calculus, but the math of Neural Lace is something we will dive deep into on another podcast.

We talk about the nutrition of neural lace, the power demands of the brain, and what part of the brain we should target for Neural Lace.

We explode the idea that there is a secret sauce for Neural Lace.

We dive into the quantum mechanics of Neural Lace and we explore the idea that the cosmos consists of ones and zeroes with particles representing ones and waves representing zeroes.

a0380z

Jan 1, 2013

humanity is an information pattern eating other information patterns that eat other patterns in an infinite cycle of dissipative patterns, like hurricanes, galaxies, stars, planets, life, cells, chemicals, atoms, and particles eating other patterns. Or you can switch into the acasual way of thinking, and trust that all the rights and wrongs are mathematically balanced out because this existence is one mathematically perfect karma equation. That non-duality is the realization that all distinctions balance out to either 1 or 0. Nothing is good or bad in casuality, but life has a clear direction of right in acasuality. The reward patterns, from acausality directing causality. The reward pattern creates, shapes, and carves human existence, and the existence of all intelligent life.

a0381z

Nov 6, 2012

Micah Blumberg

Some say reality is not pre-determined, because of non linear dynamics, chaos theory, from Illa Prigogine to Ronald E. Meyers <http://www.army.mil/article/90447/> "Meyers is listed as the inventor on 14 patents. He co-authored a book, "From Instability to Intelligence: Complexity and Predictability in Nonlinear Dynamics," -- covering nonlinear equations in math, physics and biology, and authored a plethora of scientific papers." Prigogine likens choice to a dice-roll, a bet, you have a bellcurve of things you are likely to do in the fat middle, and things you are less likely to do on the thin ends. If nonlinear dynamics applies to brains, then predeterminism isn't possible. No one can perfectly predict the result of how your brain will coordinate you until it happens. Your brain can also change itself, as demonstrated by the emerging science of brain plasticity,

The sad thing is that people think determinism means you can't do whatever you want to do in life, but that's a philosophical error, because technically what you do is always what your system wants to do in a manner of speaking. The physics of you coordinates you. The best reasoning I can conjure is the choice reaction, based on the best prediction of the future, that is the brainwave triggered by cell reaction.

Army scientists earn patent for advanced neural chip
www.army.mil

Victor Smirnov

Future is predetermined but it is not computationally predictable.

Micah Blumberg

1. perhaps you have an epistemological problem, (no offense is intended by that) if you can't predict it, then its not pre-determined. 2. no one has proved that determinism underlies probability, although it is possible.

The nonlinear argument insists that the result does not exist, until the exact moment it exists, and it can't be known before it exists, it's a phenomia of the present. To believe in predeterminism I think you have to imagine linear time, in euclidean newtonion space, pre-general relativity and quantum physics. Since general relativity time is known to be a dimensions of space, so events in the past can still change, and events in the future can be effecting the gravity of the present. What makes the present moment the present moment then? Is it some potential difference? Like an particle that averages a past geometry and future geometry together? Quantum physics discoveries this year are demonstrating that an event and its cause can give rise to one another, as if pencil rolling also cause the pushing of the pencil. Its bizarre to think of time as a nonlinear dynamic, which is why most people don't, but if you don't your pre-Heisenberg. the very thing that would cause changes in past and future is the uncertainty principle applied to gravity.

Victor Smirnov

Probably only a terminological problem. States of a system under nonlinear dynamics are computable. So having current state you can always compute the next state. But further forecasting is very hard computationally.

Prediction of a system (both classical and nonlinear) is uncomputable because of halting problem if the system is complex enough. So the only way to know the state at time T is to wait until that time T happens.

The different question is that "complexity" is not possible without nonlinear effects.
about an hour ago · Like

Micah Blumberg

"States of a system under nonlinear dynamics are computable. So having current state you can always compute the next state."

Assuming that the current state can ever be had, big assumption.

Also assuming that the current state isn't the result of next state times the previous state, another big assumption.

However you concede the argument if your really claiming that it's both computable and uncomputable at the same time.

Victor Smirnov

Assuming that the current state can ever be had, big assumption.

Sure, but it exists for the system. Even if we don't know it exactly.

Nonlinear dynamic systems are defined in the form of $S_{n+1} = F(S_n)$ for $n=1...$

And they are usually not convertible to the form of $S_n = P(S_0, n)$. This is what uncomputability means here. But we can approximate P up to some degree.

about an hour ago · Like

Micah Blumberg

"Sure, but it exists for the system" As what? How does it exist for the system? As sequence of matter wave/particle's that only exist on average when your looking? How does it exist unto itself? Are you outside the system?

about an hour ago · Like

Victor Smirnov

Ok. It exists like a current physical state of the Universe)

Micah Blumberg

When you say that do you mean the current state is the present moment? How many current states of the universe exist simultaneously do you think? How many present moments exist across time right now?

I think I'm aiming toward the articulation of a conceptual argument that the universe only exist on average, that the future and past exist sometimes, but not always, that this on and off again state of matter means that we can't have a current state that would even be conceivably measurable. Going way beyond the idea that the complexity maybe irreducible, and not-computable to humans and computers, going as far as to say it's not reducible because it's not even really all there, and this is a spooky notion of cosmic consistency, to suggest that we won't have pre-determinism because the universe is expanding and contracting at in-consist rates, or to say because it's existing and not-existent without a constant.

a0382z ctp

note from Feb 21, 2014

(dendrite, cortex) neo mind cycle

Micah Blumberg

There is some speculation, about dendritic computation, that the dendrite can, even absent incoming stimulation, cause forward and backward propagating spikes.

It would be as if content addressable memory had the additional feature of being a computer that could turn itself on and reprogram or activate other content addressable memory.

Okay so maybe you could try to say that dendritic computation could be like a timing program. Still in the event based paradigm.

There are six computer programming paradigms, event based programming is one of them.
http://en.wikipedia.org/wiki/Programming_paradigm

Why does content addressible memory have to fit in the context of event based programming as opposed to one of the other programming paradigms.

Programming paradigm - Wikipedia, the free encyclopedia
en.wikipedia.org

A programming paradigm is a fundamental style of computer programming, a way of ...See More

3 hours ago · Edited · Like · Remove Preview

Micah Blumberg

Event based, by comparison, does seem like it would be the choice of behaviorists, implying sort of the external events drive the machines behavior, more so than internal events.

Someone who is a neuroscientist first and programmer second might be skeptical since perhaps 90 percent of brain activity feeds back toward the senses. It does not seem like the external is driving the internal, as much as it seems like internal feedbacks loops are driving the external. This might not be event based programming in comparison with other types of programming, any comments? http://en.wikipedia.org/.../Comparison_of_programming...

Comparison of programming paradigms - Wikipedia, the free encyclopedia
en.wikipedia.org

This article attempts to set out the various similarities and differences between...See More
3 hours ago · Like · 1 · Remove Preview

Black Square

Actually, Micah Blumberg, you have made a most excellent point.

Indeed, there are ten times as many axons going from the cortex to the retina than there the feedforward from retina to cortex. This illustrates that there is much more going on than merely event-driven reaction to stimuli.

When we consider how an "event-driven programming" paradigm could apply to the brain, in formality or in metaphor, I think it is worth delineating two different scopes of possible applicability.

In the first case, we can apply the concept "event-driven programming" in a metaphorical or analogous sense. We can define our thinking system in the way that AI and cognitive science

defines it, that is, by using operational definitions for the behaviours of the system in terms of its inputs and outputs. The internal states of the system are kept reasonably simple and there is a preference for comprehensible internal representations.

In the second case, we can use a formal definition of "event-driven programming", and search for this computational pattern in cortical electrophysiology. We can then further investigate how this pattern can be embedded within a more general theory of neural computation. The advantages of approaches from the formal point-of-view, is that we move towards mathematically understanding the experimental realities of the only existence proof of higher intelligence on the planet -- the human brain.

Any cognitive approach to the system is ultimately limited by our own imagination -- we don't know if top-down concepts deduced from operational definitions of the system, are sufficient to reproduce human intelligence. But by studying the complex realities of the brain, we don't risk overlooking critical subtleties of brain computation that are easily missed by top-down cognitive approaches.

The secret to human intelligence lies in the formal structure of neural hardware. Intelligence is a hardware problem, not a software problem.

2 hours ago · Unlike · 2

Micah Blumberg

Black, thanks for that recognition, I'm honored.

In the first case: I don't know what you mean by applying event driven programming in the metaphorical or analogous sense.

I was wondering if Juan thinks the brain is event driven because every chemical reaction is an event in spacetime. I was wondering if Juan meant for us to realize that everything is event driven in the very broadest possible way that somehow included every plank second in every location of the cosmos.

In the second case I was also curious if Juan meant it was obvious that the content addressable memory is only used in the event driven paradigm verses other computing paradigms.

Can someone answer the question: can content addressable memory apply to other computing paradigms other than event driven programming?

I know that many people in this area of facebook think that top down concepts are an illusion. They think that all the brain's functions are generated from bottom up physics.

However in some of my studies on neuroscience I have come to the hard to defend conclusion that concepts drive their own development.

That is I think information criteria, via alternating coincidences in feedback loops, are internally running the show from the top down. Meaning information criteria is driving cells from the inside far more than cells are being driven via external stimuli.

Maybe you don't have to agree with that kind of live operating procedure but you can still answer this question.

Can a lazy programming language handle the live operating procedures of alternating on and off again feedback loops that run mostly independent of external input.

Can Haskell do it? Can Haskell be a live system, or will it always die after performing one iteration of a feedback loop and then wait for user input?

15 minutes ago · Edited · Like · 1

Micah Blumberg

I have been googling Content Addressable Memories, or CAM for short.

I think Juan is correct when he says:

"Juan Carlos Kuri Pinto Content-addressable memories are, BY DEFINITION, event-driven."

That's why he seems to have hit the snooze button on this conversation.

"Juan Carlos Kuri Pinto (...) The fact content-addressable memories in the brain recreate many aspects of event-driven processing is so obvious that I find this discussion unproductive. Really. *sigh* "

If I am interpreting Juan correctly I think that Juan thinks it's obvious to everyone that the brain is using event driven content accessible memories just like a search engine, but I think he means the brains internal activity is assembling memories by calling them, in a similar fashion to how a user's activity calls is an events that triggers CAM.

However the idea that this is obvious to everyone is ridiculous.

So it is ridiculous to think Juan's view should be obvious to just everyone, or even all people who study both neuroscience and program computers. People actually have to think critically about his statement first to take his perspective. There is a lot to consider before getting to that point of understanding why Juan thinks it's obvious.

11 minutes ago · Edited · Like

Micah Blumberg

In this case maybe Juan's secret program has an artificial cortical thalamic loop accessing the rest of the neocortex like it was a search engine for assembling memories on the fly.

Like the neocortex was a CAM memory system accessed by the mid and lower brain.

10 minutes ago · Edited · Like

Micah Blumberg

When I read "On Intelligence by Jeff Hawkins and Sandra Blakeslee" I came to see the hierarchical temporal memory concept as existing to provide the benefits of a content addressable memory.

So it is plausible that at least the hierarchy of the neocortex has the advantages of CAM memory in that you can know instantly if you are having a new experience or if you have experienced something like this before.

A hierarchical memory system in the neo cortex has the advantages of content addressable memory, in that a single event that instantly associates with something similar.

One tiny event is seemingly an instant search of our entire memory system from the first day to the present.

But does the hierarchical neocortex have all the same limitations as CAM?

Is the neo cortex only event driven?

I am reminded of a video explaining DNA that argued, fundamentally, that cells only react, they do not act.

Maybe the brain needs events to react.

Maybe human memory is only event driven, including internal events, in the broadest sense.

When I consider the active nature of the whole mind, and the ratios of feedback activity, I think it's plausible, but hard to defend, that memories, like concepts, like the self, are all self driving, self developing in the bio-mechanical sense.

I think information loops driving cell activity to self develop.

I would not describe human memory as CAM, even though it has CAM capabilities, because it's active, live, it's information-driven as opposed to event-driven.

Also we can say these are information events. So it becomes less of a real distinction.

External events become attractors, with successive iterations, that redefine the tonic landscape of brain activity around them, it seems like a lazy programming language is the wrong fit for such bio-mechanistic temporal activity

a0383z

(Thalamus, cortex)

Not just the detection of coincidences but also the detection of breaks in the regular rhythm of coincidence patterns.

New coincidences, or new patterns.

It takes many neurons to register what a single neuron has seen.

Because a neuron transmits what it sees.

It's a change detector.

Basically by new patterns.

It takes many neurons to register whatever a single neuron has seen.

What is the real way that the thalamus sends the perceptive signals to the cortex so that I could emulate that?

Bioelectronics.

Finding out how the thalamus communicates to the cortex

What is the real way that the thalamus sends perceptive signals to the cortex?

machines learning object relationships

"Artificial intelligence that understands object relationships"

<https://news.mit.edu/2021/ai-object-relationships-image-generation-1129>

a0384z

Apr 3, 2013

(field, decoherence, graph)

Orch Or debate

Do we know quantum particles enough to know that they couldn't be conscious?

Sean Cusack

they'd have to have enough degrees of freedom to contain the complexity of an intellect. it would be interesting to demonstrate the minimal complexity for consciousness...

2 hours ago · Like · 1

Ivan Furone

I think we are missing an important tile of the puzzle of consciousness, that is: should consciousness be studied from outside the box or from inside the box? in the first case I argue, that research would be mainly driven by the efforts of other sciences as quantum physics, while in the second, consciousness is studied by means of another consciousness, that is by consciousness itself. That would automatically bring up an expectation that an autoconscious particle thinks, or, in other words, that it is capable to draw inferences on reality and produce a change in it, let alone changes in itself. I'm personally persuaded, that AI can tackle this effort better as the leading science that drives ahead the research.

2 hours ago · Edited · Like

Matt Mahoney

(sigh) What do you mean by "conscious"?

about an hour ago · Like

Micah Blumberg

take Stuart Hameroff for example, he thinks microtubules in our neurons connect with the quantum particle range which is where choice becomes possible in his model.

is there any evidence to prove him wrong?

about an hour ago · Edited · Like

Matt Mahoney

I think that our microtubules connect to an alternate universe to make us conscious. Is there any evidence to prove me wrong?

about an hour ago · Like

Micah Blumberg

"(sigh) What do you mean by "conscious"?" I mean can particles in the quantum realm be considered components of thought in some other kind of mind, or possibly in current minds.

about an hour ago · Like · 1

Matt Mahoney

No.

Micah Blumberg

Based on your best guess or some proof? Some conclusion you know someone researched and wrote about?

Matt Mahoney

Consciousness is a belief that evolution programmed into your brain.

Micah Blumberg

So you defined consciousness as a belief rather than something that transcends beliefs?

Daen de Leon

@Micah: Apart from decoherence at body temperature, problems with timescales, and problems with distance scales? No, not really.

Ivan Furone

"If human thought comprises non-computational processes, then how is the brain supporting these processes? To answer this question, Penrose appeals to physics, and claims that the theory of quantum gravity is likely to be the kind of physics required to explain a conscious mind. ... Microtubules, according to Penrose, support a substrate for the quantum gravity effects required for consciousness." (H.Brighton/H.Selima - Artificial Intelligence: A Graphic Guide)

Micah Blumberg

problems with scale. PERIOD, but just because it might seem implausible, on the basis of scale, for quantum fluctuations to have an influence on human thinking, you have to behold that idea until the end of an unconscious disregard for the potential mass effect of the whole quantum field at once.

does the whole ocean have an influence which resembles a kind of intelligent system that humans have never truly calculated? do you laugh at the idea of anthropomorphized oceans, because I didn't say it was like a living intelligence, I am talking about "systems"

because isn't the brain a memory system we are now finding out in this most recent decade of mankind? what will man discover tomorrow?

about an hour ago · Like

Matt Mahoney

Exactly what does the brain do that can't be explained by the mechanical firing of neurons?

about an hour ago · Unlike · 1

Micah Blumberg

Do you sense space? Does anyone sense space around themselves? Have you considered yourself as spacetime itself? How do your mechanical fires create the sense of space for you?

about an hour ago · Like

Ivan Furone

Penrose's point seems to suggest that in the future some questions will be answered by evolution itself, but there would be a lot to wait (say thousands of generations?) for these changes to appear on the surface, if any. On the other hand, I think that every attempt to investigate consciousness from the way quantum physics interacts with physical brain will reproduce this controversy ad infinitum.

At some moment, there will be need to address consciousness building models, making appropriate hypothesis and previsions and data analysis that may lead to some conclusions that lie on a different perspective than biology and quantum gravity. AI has this potential. But I think there is a lot more to do.

about an hour ago · Edited · Like

Matt Mahoney

You still haven't defined "consciousness". How would I recognize it in a machine?
about an hour ago · Like

Micah Blumberg

This is bring your own definition of consciousness to work day. I'm not here to define terms. Everyone can have a different definition of consciousness I don't care, I will just say that being so specific is not germane to intent of the original post. I'd rather people generalize, be creative and abstract.
about an hour ago · Like

Ivan Furone

Rewarding discussion. Hopefully I'll come back with some points worth contributing, thank you very much!
about an hour ago · Like

Matt Mahoney

OK, how about asking the original question without using the word "conscious"?
about an hour ago · Like

Micah Blumberg

Can quantum waves contain or create beliefs? can the wave particle patterns reflect and process patterns as distinct and as complex as the brainwaves in humans?
56 minutes ago · Like

Matt Mahoney

No. They follow the Schrodinger equation.
48 minutes ago · Like

Micah Blumberg

Suppose a similar equation is used to successfully predict human thought?
13 minutes ago · Like

Micah Blumberg

<http://www.youtube.com/watch?v=-UX2RUEkD7I>

Schrödinger equation

www.youtube.com

The first video of a series showing how the Schrödinger equation can be derived ...

a0386z

May 13, 2011

(field, decoherence, cortex) old physics ideas

5. the symmetrical splitting and recombination of matter and anti-matter has to travel longer distances depending on which route it takes, because of the unevenness of space
6. the longer routes that splitting matter has to take in order to recombine means that matter sticks around longer than it would stick around if space was perfectly even
7. so we have now a pattern of increasing lumps in space, because the matter now has to travel around other lumps of matter in order to recombine
8. and the opposite energies of matter and anti-matter means that they repel each other, resulting in the opposite of gravity, and that same energy is responsible for the gravity of matter on matter, and the gravity of anti-matter on anti-matter
9. The routes take on a sort of spiral pattern, because literally the matter has to travel around other matter, no further and no less, in order to return to it's original state
10. This spiral pattern is really a fractal pattern of the energy of the matter splitting at a very precise decay rate.
11. The unevenness of space causes a break in the symmetry of the fractal pattern, and this is why one side of it can end up looking like a black hole of nothing, and the
12. The decay rate of particles is continuous because of the apparently random quantum range.
13. The resulting of interaction between the spiraling matter (and anti-matter) with the randomness of the quantum range results in a natural selection of matter patterns.
14. These patterns becomes so complex through time, thanks to this process that eventually they can take on atomic forms, become stars, that form more atomic forms,
15. The cool thing is, this fractal pattern in the energy of matter, anti-matter, interacting with the seemingly random quantum range of spacetime is analogous to the development of patterns of thought in the human brain.
16. See if the world around us, filled with people, and life, is essentially chaotic, that's analogous to the quantum range
17. What life does, what cells do, and what the neo cortex does especially well is it becomes a pattern of increasing complexity, because of the natural selection from the decaying rate of random particles
18. The patterns of thought, and the patterns of matter are analogous because they increase in complexity with the experience (interaction) of the random world (random particle decay) because interaction with the inherent instability of spacetime
19. So while the yang of space is apparently random entropy, the yin of space is increasing extropy that is the result of continuous balance between the opposite energies of the universe
20. The uneven paths that the extropy (matter and anti-matter) side has to take to deal with the chaotic terrain of the entropy side is resulting in the novel creation of patterns, that keep developing according to the natural selection of patterns in spacetime, which means that space itself began to think, a very long time ago
21. The patterns of matter are creating even more complex patterns of matter. Through this natural selection the conscious universe is manifesting human beings and all
22. the creator is the extropy which is the yin, which is the opposite of the yang which is the entropy which is the illusion

Short summary, the universe is awareness, and your it, all of it.

the abstract entity is evolving, while remaining consistent to the core physics of the universe at fundamental levels.

isnt matter a manifestation of pure cosmic energy? yes

Can one be radical and say space is energy and complex patterns of matter all derive from it?
yes

So anti matter and matter is space at completely different levels of densities. Yes

23. The density increases when the route of a matter traveling around other matter lengthens the time the amount of time before it's decay, and the density of mass increases more in some parts of the universe, because the decay rates are effected by the traveling time of matter

24. Matter and Anti-matter are energy, and with a longer traveling time they are also mass.

What's that silly equation something about mass being energy divided by the speed of light?

25. energy equals mass times the rate of particle decay in even space, since space is not even, we get all kinds of cool effects, like light slowdown, and clocks changing their change rate at on the space shuttle because of different densities

Energy equals Mass multiplied by the collision rate of matter and anti-matter in ideal space (even space with no density)

the speed of light is close, I have to give Einstein props for being almost accurate!

Accurate enough actually that all his equations are still valid

I will call the theory "Very Specific Relativity" new short summary: matter evolves in complexity because of the uneven quantum possibility, resulting broken fractals, resulting in novel patterns of matter and matter density resulting the natural selection of patterns in space, resulting in evolution of patterns, and thus space began to think, and allowed the awareness of light, let there be light!

An anti-matter person on the other hand would find anti-matter to be very attractive.

The reason there is so much "Cosmic Energy" is because Matter and Anti-matter cannot stand each other, they keep splitting apart, but on average they are as one.

26. Gravity (the law of attraction) is matter curling around itself, because it is increasingly fed up with being one with (anti-matter), relative to the the total amount of peaceful space and the raw unbiased possibility of particle location.

yes anti-matter is physical, and as a matter being you would find it repulsive.

a0387z

(oscillat, decoherence, super position, electromagnetism, conjecture, observer, vector, dissipation) Now I'm really certain that my Quantum Gravity Equation Hypothesis is a brand new exciting idea that replaces the extra dimensions in string theory. The Kaluza-Klein theory of extra dimensions led to string theory.

The main conjecture is that all mass warps space at all scales, and that space that is unwarped is a photon, but that the energy of an ideal photon breaks down at random, resulting in warped space that expands in both time and area simultaneously.

At the quantum scale any and all particles, except ideal photons (the theoretically kind that has no mass and travels at C, in reality we don't know if real photons match our ideal of a photon, the photons that we do see might have some tiny amount of mass, and they might not travel at the speed of light perfectly, we may never know.)

In addition virtual particles, and virtual atoms that could exist exert a dissipative force on particles, its like if the threshold for the existence of a particle is almost met, but not completely met, then the virtual particle is dissipated instead, and its dissipation is what I think is the repulsive force in electromagnetism, and below threshold energy dissipation from virtual configurations (of almost particles) is probably the weak nuclear force.

The strong nuclear force, that brings together a positive proton with a positive neutron is something like orbital velocity, the two positive objects are out of phase, so they can slow each other down, get stuck together, almost like a planet orbiting a sun but different, because it's more like a kinectic orbit, not a literal orbit, the mass that each creates slows down time in the immediate vicinity, that is enough to curve space at the quantum level, and the curved space between the proton and the neutron is what keeps them close together, even as they are also repulsed by another.

It has been said that an electron's spin is intrinsic, the story goes that we can't describe the electron's spin as kinectic angular momentum or potential angular momentum, intrinsic meaning that it can't be separated from an electron, and that's true in one sense, but there is a state where the electron can be split into a spinon, a orbiton, and the holon (or chargon).

So an electron is a mass with charge with a spin, and if its spin is removed then its not an electron by definition, but, by the same token if an electron is not really a fundamental particle, it's chargon+an orbiton+a spinon, that kinds says that an electron really actually can lose its spin, so spin is not intrinsic to particles after all.

Spin-charge separation

From Wikipedia, the free encyclopedia

https://en.wikipedia.org/wiki/Spin%E2%80%93charge_separation

"Being in Two Places at Once:

Spin-Charge Separation

Mark Schubel 2010"

https://guava.physics.uiuc.edu/~nigel/courses/569/Essays_Fall2010/Files/Schubel.pdf

I think this means that we can actually think of an electron's spin as a kinectic angular momentum, one that is defined by the electron's relationship with the field that its in, or more specifically the electron's spin is about its last relationship with some other particle that it interacted with, be it a virtual particle, its emergence from a photon (it's split from it's anti-matter opposite the positron) it's interaction with a space warping atom, or its interaction with an observer oscillator, or is interaction with an electromagnet.

An interesting thing to think about it is that when an electron is in superposition, it's argued that it may have either an up or down spin, and that only by measuring the electron does its collapse into having an actual spin of either up or down, but when the states of superposition are described they are described as either up or down or both, but do we really know that the state

of super position is not potentially also like the state of spin-charge separation, where there is no electron in super position but instead there is just a chargon (holon), an orbiton, and a spinon? Perhaps we can think of these components of an electron as like the super position state of an electron, and that the energy change from the measurement of that field is the catalyst for the emergence of the electron & specific spin. I'm arguing that by observing or measuring the field of space we are adding energy to the field of space and that is causing space to energize in response which results in the emergence of particles from virtual particles, by measuring we are pushing the energy threshold up high enough for "the collapse" of space or the convergence of space into particles.

This idea of quantum gravity replaces the extra dimension of string theory, because every mass, from an electron, to an atom, to a molecule is creating a traffic jam in the particle field, which causes particles to flow around it, which causes space to expand in time/space dimensions, these extra dimensions of time and space resolve themselves into the appearance of the three dimensions of space and the one dimension of time, but at the particle level there is a gradient of time dimensions that we don't see with our eyes but that particles react to.

Think of it like if you have 1 dimension of time, in addition to a dimension of space, but its around an atom, then time around that atom is warped so that particles have to travel faster to go around it, but they also become more likely to go towards that atom, because if a particle could travel in any of 6 directions in normal space, up down left right forward and back, in a 3D vector field, every added dimension of time, created by an atom warping space, means that there is an additional change that the particle will move towards that object that is warping space, and that it has to have higher energy to avoid moving toward that object in a sense. Warped spacetime is creating extra dimensions for particles to travel. These extra dimensions are not curled up and too small to see.

In short the potential number of extra dimensions is every possible combination of mass, from the plank scale, the electron scale, the atom scale, and so on. Every particle combination, atom combination, virtual particle & below threshold virtual atom configuration is going to be space warping in a way that creates extra dimensions for particles to travel via time.

Superposition, at the particle scale things are moving so much faster relative to the human scale because mass/time is slowed by the space that is warped by mass/time

mass&time are the same thing

mass/time/amplitude / energy/space/frequency

duration/length/topology/complexityconfiguration (information patterns) /
space/dissipation/entropy/chaos

a0388z

(dendrite, quantum, decoherence)

Quantum effects work with my theory, but my theory also works without them,

You see if a ripple emerges from the microtubule, it might be added to dendrite which is counting incoming electrical charge, accumulating sodium ions for example, the signal from the microtubule might add to that charge, and it could be the tipping point of the signal that causes the neuron to fire, however I think its likely that the quantum signal from the microtubule will be in most cases too small to effect the firing of the neuron, but either way my hypothesis for how consciousness works with the quantum physics element, and without it.

a0389z

Nov 9, 2021 (I suspect this note is much older not sure)

Roko's basilisk is a thought experiment proposed in 2010 by the user Roko on the Less Wrong community blog. Roko used ideas in decision theory to argue that a sufficiently powerful AI agent would have an incentive to torture anyone who imagined the agent but didn't work to bring the agent into existence.

if you help it exist you will be rewarded
if you hinder its existence you will be punished

what is a higher level pattern driver

a macroscopic pattern discovery drives some pattern developments that change activity in the mesoscale and the microscale and each scale If brain activity is driving changes that affect all of the rest of brain activity in someway.

a0390z

Oct 18, 2013

(optogenetics, synap, cortex)

So this morning I invented electrogenetics, the world can thank me later!

For reference purposes read this article

"Scientists expand the genetic code of mammals to control protein activity in neurons with light"
<http://medicalxpress.com/news/2013-10-scientists-genetic-code-mammals-protein.html>

Micah Blumberg optogenetics is flawed because you need something as large as the Cmn amino acid for light from an led to break open a particular protein. they should be using something smaller than a stream of photon particles, like electricity, then perhaps you would not need to alter the genetic code of a cell. I think I will call this new technology electrogenetics.

Your welcome!

57 minutes ago · Like

Andreea Epure Micah.... what on earth are u talking about?

56 minutes ago · Unlike · 1

Micah Blumberg "To make proteins respond to light, Wang's team harnessed a photo-responsive amino acid, called Cmn, which has a large chemical structure. When a pulse of light shines on the molecule, Cmn's bulky side chain breaks off, leaving cysteine, a smaller amin...See More

48 minutes ago · Edited · Like

Micah Blumberg okay another way to say it is, the amino acids that are already in a mammal are not particularly responsive to light, but they are probably all responsive to electricity, so why optogenetics when electrogenetics should make the road between research and treatments far easier?

35 minutes ago · Like

Cyrus Ghamari The specificity of "a protein within a set of in-action neurons" for a related piece of event would mean: we can now categorize human's behavior & ultimately humans themselves according to those elements of functions.

21 minutes ago · Like

Andreea Epure Micah Blumberg when you have the evidence for your claims please do share them with us!

20 minutes ago · Like

Micah Blumberg for which claim or claims in particular? you want me to write a peer reviewed science journal article with 100 references? it says in the article we just read that the amino acids in mammals are not particularly responsive to light, so really it's an obvious question, why are they using light, when pretty much all the amino acids in a mammal are already responsive to electricity?

18 minutes ago · Like

Andreea Epure You want to say that electricity has an effect on the neural activity as much on the genetic expression of the brain blue print. What is your prediction? You use electricity to produce what?

16 minutes ago · Unlike · 1

Micah Blumberg well you could use electricity to trigger spiking, to open and close potassium and sodium channels, to break and move proteins, to erase and make long term memories, lots of things, the brain already uses electricity, it works

15 minutes ago · Like

Andreea Epure Well, this article talk about a very narrow subject, whereas you claim you can stuff at a global level. There are interlinked, but not complementary!

13 minutes ago · Unlike · 1

Bijay Nanda . . . the leap from photons to electrons may well be a quantum one . . . ?!
interesting thread though . . . meandering into string theory ?!

13 minutes ago · Unlike · 1

Micah Blumberg Well it's just an idea, but intended with some humor. Not so much seriousness.
It is very funny to invent something like electrogenetics before breakfast

10 minutes ago · Like

Andreea Epure Well, I would love if you could stick to the matter of the subject! x

9 minutes ago · Unlike · 1

Micah Blumberg Well one question specific to the topic is how would I use electricity in place of a flashlight, is there some kind of flashlight that beams electrons instead of photons? however that's an electrical question

I wonder if Black Square knows the answer?

7 minutes ago · Like

Micah Blumberg

This morning I coined the term and invented electrogenetics, and this evening I coined the term infogenetics, like optogenetics, which uses an led light to trigger neural activity and break open light sensitive aminoacids, the idea is to use an electron beam (electrogenetics), or a specific information pattern (infogenetics), to trigger various kinds of neural activity, to control brain activity for research.

I'm reading this book about how neurons detect information patterns, and reset the firing criteria of both pre and post synapses on both sides of the axon. resulting in custom temporary circuits that excite or inhibit based on the reception of specific information patterns. So packets of criteria based firing cells are colluding in aggregate to result in deliberative decision making, sometimes simulating the appearance of rule based and propositional decision making.

I wonder if we send specific information patterns, mimicking specific criteria triggers, if we can successfully target specific neurons to inhibit or excite other neurons. If so that technology would be called infogenetics.

On electrogenetics, perhaps we could apply some sort of direct contact to the protein, from a portable electron microscope gun, to avoid having air scatter the electron beam.

Is it possible to send an electrical spike to a specific location from outside the brain?

My cranial electrotherapy stimulation device stimulates the brain stem, but how? Specifically but it's connected to the ears and somehow the current goes to the brainstem, which happens to be between the ears (right?)

I wonder if CES is just running a straight line of electrical current between the ears.

With transcranial direct current stimulation we can target specific regions the the prefrontal cortex for stimulation. Yet the target area seems to be between the electrodes so...

Is a device possible that would let a person stimulate a specific neuron from outside the brain to either inhibit, excite, or otherwise reset the firing criteria of other neurons? Or perhaps even to just destroy a specific protein? I'm guessing not.

I'm guessing any kind of electrical stimulation from outside the brain would stimulate everything in between.

a0391z

Dec 18, 2010

(emotion, observer, perception) perhaps every thought, notion, emotion, wish, byte of information, object, space, photon, molecule, atom, thrust, force, person, car, snail, cell, rock and sock is at once one with the true geometry of spacetime unfolding in time but manifesting outside time as a single shape more faceted and complex than our normal sensory perception will ever reveal, and perhaps we can know it through the understanding of physics, and perhaps we do know it, at least a part of it already.

Perhaps the geometry of spacetime is the explanation for why there are people wondering why people exist. Imagine that this geometry is so much more complicated than it appears to be, so much so that it seems to be increasing in complexity from one perspective, and at the same time increasing in entropy from another perspective, and y...et from a 4th dimensional perspective it appears to be not moving at all.

Is the observer reality?

Yes. Is it creating reality? Is it creating itself? I don't think so.

The geometry of spacetime is enough, and there is no need for anymore explanation because the geometry of spacetime is enough. Just as the geometry of water explains the ocean, and how the geometry of gravity explains why there are planets and stars and galaxies?

Imagine that most of the time space is seemingly empty, and everyonce in a while it seems like something is there, and in fact something is there temporarily when that matter and anti-matter splits apart, Then a certain anti-matter particle decays a slightly slower rate then it's matter opposite for a very long time, and the entire universe is gradually changed by this continuous event, complexity gradually increases according to a geometric pattern everywhere. At the same time entropy is increased by the increasing complexity in a viciously feeding circle of chaos and attraction.

a0393z

Apr 5, 2014

(perception, graph) the tools that I have include a graph of five frequencies of brainwaves overtime, gamma, alpha, beta, theta, and delta

I have another tool called 3d brainwave activity visualizer, but really it's just an interpretation of the numbers

The eeg sensors are only picking up numbers representing when waves peak, so the graph is best

other technology like fmri measure changes in blood flow so they "interpret" what brain-"wave" activity could be.

you don't mention the words quantum, phenomenon or perception,

you say you are measuring waves, electrical patterns, brain activity, to collect information and that you have a scientific process to "make original discoveries" they don't need all the same details to help, they don't even need to know the big picture of what you are really doing, they only need to know their own small part, you needed data, for science, so they if they want to help they have to do this, and we give them a list of easy steps to follow.

what they get is a simplified version of a the project that leaves out the complex stuff and just focuses them on what they can do to contribute

I can understand the whole project, and help pick out the parts that they need to know

a0395z

Jan 9, 2014

(synap, observer) Soul Dust, Incognito, Oliver Sacks, Atomists, Observer Effect

Micah Blumberg

Consider this statement:

"Lanza says that we carry space and time around with us "like turtles with shells." meaning that when the shell comes off (space and time), we still exist."

If space and time is a shell that a consciousness carries around, then why do people have gaps in their memories, why do people have black outs, why do people fall asleep and lose consciousness? If consciousness was independent of spacetime wouldn't it be conscious all the time even when the body was sleeping?

about an hour ago · Like · 1

Micah Blumberg

If you like the idea of a biological soul, I read this compelling book earlier this year or last year, its interesting <http://www.amazon.com/Soul-Dust-The-Magic.../dp/0691156379>

Soul Dust: The Magic of Consciousness

www.amazon.com

How is consciousness possible? What biological purpose does it serve? And why do...

See More

about an hour ago · Like · Remove Preview

Micah Blumberg

I have also read "The man who mistook his wife for a coat rack" by Oliver Sacks, and "Incognito" by David Eagleman, and I have read numerous papers on split brain patients. The problem is that when a scalpel or a drug, or disease, or prolonged malnutrition, or extreme trauma can change your personality, change who you are, split you into two souls, one in the left hemisphere, one in the right hemisphere, well then it starts to look like the soul is not independent of spacetime.

about an hour ago · Edited · Like

Micah Blumberg

In ancient times the atomists argued that everything was made out of atoms, not spirits, and the people who believed in spirits murdered the atomists to shut them up. but the collective cognitive trends that are trying to unite the atomic idea with the spiritual idea are forever trying to suppress and not think about certain contrary evidence, that can't be refuted, only ignored, buried, murdered, banished.

about an hour ago · Like

Micah Blumberg

I said before I don't believe people exist, rather there are cognitive trends doing this. Trying to capture new mindshare, like memes, like bugs taking over human brains.

about an hour ago · Like

Chase

thanks for your input, im going to check those out. i mean our bodies and even our brains are tools of our consciousness. without conscious perspective would the objects we associate with the physical reality still appear as they do, with consideration of the effects of an observer in quantum physics, or more so as just a network (considering all energy in the universe and varying densities across space time) of indistinct states of (overlapping?) superpositions of infinite possibilities? which really is what the universe/multiverse really is composed, and assuming such a quantum network existed and our spirits and awareness are resultant of quantum interactions occurring within microtubules in neural cells of the pituitary gland and temporal pituitary junction, with conscious information interpreted as vibrations and quantum interaction between the system of subatomic particles existing inside our neurons and those of the outside physical world as well as the bioelectrical, biochemical etc interactions, encoded as information

40 minutes ago via mobile · Like

Chase

excuse the disorganization of that i was just typing off the top of my head

39 minutes ago via mobile · Like

Chase

i do not believe that it is completely independent of spacetime, more like symbiotic, maybe in those periods the consciousness/subconscious is simply not deriving experience from any outside physical stimuli, and any perspective that bases their reality on physical events will be less likely to take information from metaphysical experience, perhaps causing lack of awareness. or perhaps black outs etc are caused by the existing connection between brain body mind and soul, and so any trauma to the body causes trauma to the collective system possibly resulting in temporary loss of consciousness

33 minutes ago via mobile · Like

Micah Blumberg

1. On the observer effect. I don't think it means what some people think it means. It means that measuring quantum events interferes with quantum events. It does not mean people have souls. It does not mean consciousness has primacy over existence. It does mean the observer is creating spacetime.

2. Pineal glands are glands, they do what glands do, nothing else. The evidence that that the pineal gland has magical properties that imbue the brain with consciousness does not exist, even the idea that the pineal secretes dmt does not exist. The evidence that people claim exists for the Pineal Gland's magical properties also does not really exist. I tried to trace it down, to the hard research papers, it's not credible science. It's so awful when people I respect with brilliant minds fall for the whole story that the pineal gland is your third eye crap. If you just study more of the criticism of it, you can find on the web, you can rid yourself of this cognitive waste.

3. the realm of quantum physics can induce random electrical changes at the level of microtubules and synapses, but that's it, it's just random noise. It adds an element of chance, meaning more noise, that your synaptic activity must overcome to adapt and perceive. If the soul is communicating through random quantum fluctuations it's just interfering and being defeated by the brains systems on a regular basis.

4 minutes ago · Like

Micah Blumberg I see the brain like a movie that is watching itself. It's a ten thousand frame per second movie, it picks up new frames from the outside world, and adds them to the frames it already has, it does this to plan movements, reactions, patterns that result in nutrient rewards, or neurotransmitter rewards, serving the mechanism of replication via natural selection.

7 minutes ago · Like

Micah Blumberg I don't think there is such a thing as quantum soul because I think the quantum realm is just random noise. It's not orderly sounds, it's not messages, it's not doing anything interesting, it's just what it is. So what we think is the soul is just this strange loop (Reference Douglas Hofstadler) of cognitive songs with many layers tempo-spatial expressions. The brain is more like a piano, the neurons more like piano keys.

a0396z

Jan 29, 2015

Synergy, Reduction, and Saliency Are Paramount to General AI

In my AI systems I never preprogram preexisting AI algorithms. I rather let the machine learn the causal geometries of Reality:

Reduction is a proactive and unconscious exploration of the whole space of mental resources, mind patterns, and hypotheses. It is not a straightforward and preprogrammed recipe to solve a problem. It is not a reductionist system. It is rather an inverse problem in which the mind holistically tries to find the recipe. If the mind cannot match mental patterns of thinking to solve problems or to explain phenomena, the mind tries to learn or to create the key elements and the missing pieces in the mind puzzles. Thus, both the time of the reduction algorithm and the resulting recipes are totally unpredictable, imperfect, and non-guaranteed. Successful recipes are always stored. Therefore "fully functional minds" always seek to maximize utility functions which are recursively products of reductions. The evolution of sane minds always seeks sophistication, welfare, and improvement. That's the basis of the scientific method.

a0397z

(oscillat, graph) The human mind is like order that arises out of chaos. It's structure is encoded in coincidence patterns, that represent the holographic property of a representation of reality that your brain is making. As your thoughts cycle throughout the brain, with different parts of the brain playing back different parts of the pattern of you.

Pointclouds of disintegrating trinity.

So this idea is to create a video montage of trinity melting with pictures of the VR Industry, Otoy, Meta,

I realized that I do have choice. A choice that is caused by natural selection happening because of the physics of my brain chemistry interacting with spacetime.

The Computer Graphics Industry is changing film, videogames, vr, ar, with AI in amazing ways.

Silicon Valley Global News: The Computer Graphics Industry

Everyone's brain is capable of having a medical emergency that results in extreme behavior dysfunction. Imagine that with new insights into brain function, new brain computer interface technologies, and new software we could merge the medical and justice systems into one system.

What if Electricity Magnetism had an arrow, a forward or backward pointing direction

it does when using a powerline

but what if the direction embodies how a particle spin is defined as a forward or backward (up down) direction

it also makes you ask of the electrons in a wire are all facing the same direction, all top or all down?

I guess alternately both right? like the up electron waves are facing a different direction in terms of every other wave oscillation.

so the up are perhaps segregating with ups and downs with downs?

check maxwells equations

I had this vision of white marble, gold letter outline and sapphire blue inner 3D lettering for Silicon Valley Global News

Can we have a thought experiment where we think of Gravity as a reverse pressure gradient? Why or why not, only instead of pressure we are talking about the effects of spacetime warping at the Quantum & Molecular scales, with aggregate effects from dense matter convergence such as with Fermionic Condensates. Lets create a computer simulation to model the shape of space time with a dynamic time gradient at the quantum scale, as mass converges and space expands as a unified process.

Lets consider how gravity as a quantum gradient time dilation is pressurizing the spacetime field, and imagine how depressuring space might cause lift, or expansion.

photons gain energy as they move toward gravity

the higher frequency is the narrowing on of space amplitude, while the lower frequency broadens space amplitude

a0399z

May 25, 2012

v particles timeline past future

Sure yes it's possible. What's even easier then that however is becoming ok with whatever was in that memory. Sometimes deconstructing works, also disassociation works. Either path is about changing the internal metaphor, reshaping it in your mind, separating it from your idea of self, who it belongs to, who was there, what it means, how you feel about it, those things can be changed when you play with it in your mind, like distorting an image in photo shop, making it big or small, shrinking it, stretching it, adding different colors, different meanings, making the voices cartoonish if there were voices. You can say it's just a memory it's not your memory, or the meaning can have some other significance, or you can say it's really all waves of atomic vibration, or all data, and realize you can be ok with waves, you can be ok with vibration, you can be ok with atoms or all data. You can say that what you think it means is a lie, or you can

imagine that you have gone back into the past and changed it, created an alternate timeline. Actually this is isn't impossible either. New experiments with quantum entanglement have shown that particles that are going to be entangled in the future will get entangled in the past, in anticipation of their future entanglement. It's as if we now have proof that the future can alter the past, but of course no one is talking about that, it's one of those oddities that people are silent about, because we are all waiting for more information.

NEWS RELEASE 23-APR-2012

Quantum physics mimics spooky action into the past

http://www.eurekalert.org/pub_releases/2012-04/uov-qpm042312.php

a0400z

(oscillat, synap) voltage controlled oscillator

I need to connect the notes on quantum gradient time dilation including the one that talks about mass as a time crystal with the notes on neural function, the expansion & contraction of neuronal membrane during & after the action potential (and before the expansion of the dendrite) with the concept that because the mass of the neuron is changing it is literally warping spacetime.

pendulum

josephson junction

chemical synaptic gap

electrical synaptic junction

chemical fluid

oscillating magnetic fields

gradient effects of magnetic fields on cells

weakly interacting magnetic fields vs strong magnetic fields vs josephson junctions

Chaos vs Order

Agent 99

a0401z

Aug 23, 2018

(field, semantic)

what feels exciting to me about all of these new innovations in medical imaging is the possibility of multi-modal brain imaging with deep learning, and simultaneous correlation with the real world world around the subject via lightfield hologram of the world built from a variety of

sensors, with the lightfield itself being capable of doing semantic segmentation and correlation to medical imaging.

a0402z

Mar 20, 2013

(field, cortex)

When I am around many other people I often feel tall, when I'm alone I sometimes feel short. All this contrasting of forms is a generalizing delusion, sparse distributed representations formed from the brainwave output of hundreds of thousands of pyramidal cells fired in a highly complex hierarchical sequence, minus the inhibition generated by basket cell activity. This is applish (from the pyramid cells) it's not apple sauce (from the basket cells) it's slices of apples (activity resulting from a unity of higher sector activity in cortex turning inhibitions and excitations on and off until the causal of most interest is clearly in focus as a sentitional object in the loop field of awareness.)

a0404z

Note Created Nov 1, 2013

(hebb, synap, criteria, causation, hippocampus, perception, field, graph, observer, cereb, cortex, qualia)

you don't exist is a valid perspective

I was numbering my notes, this note was the last one to be numbered, and the title of note 404 was coincidentally "you don't exist as a valid perspective" cosmic irony.

as far as religions go, I don't prefer them, but neo advaita is the most interesting because it points out that there is no you. You have no self, rather you is a direction that points at a direction that points at nothing, there is no you, no self, no observer, just a direction, look and see. You don't exist, so forget about uploading to a computer, there is no you. It's the hardest thing to accept until you look, you don't have to obviously, but here is the thing, if you extend your life to 300 years, your eventually going to realize, maybe 149 years into it, that there is no you, and that you've just extended the life of a body, with a fictional character, that the body no longer believes in, and your body will not care about it's extended life, because it has no self to care about such things as life extension.

Only the illusion of a self makes you suffer in desire for life extension, funny thoughts, yeah so NDE is so stupid because there is NO YOU to experience life after death hahahahaha the brain makes an illusion of self, an illusion that dmt can alter ONLY because your brain is making that illusion (which is a rendering), mushrooms, lsd, and dmt only fucking work because the illusion of you is made by physical tissue, if you had a non-physical soul how would it be effected by chemicals?

it doesn't matter what anybody believes, because all your thoughts have no meaning except in the context of movement, yes your brain is only for highly coordinated movements believing that you exist and believing that some beliefs are yours and some beliefs belong to others is ONLY for highly coordinated movement.

hahaha its just like in the brain, ideas are inhibiting contrary ideas, and competing to hog brain space, let them both be perspectives that nobody has, just viewpoints, no right perspectives, no right views, no identity needs to be entangled with this view or that view, its like "I must exist because i believe this or that," no you don't exist and you don't "have" beliefs. beliefs notions ideas are vehicles, cars and airplanes that visit the cities of our minds, arriving, departing, and sometimes staying a while, no body believes in A creator, thats just a belief that is visits my brain when I think I am going to get laid soon or get a fat paycheck. but there is no me to have that belief, or to not have it.

its a mistake to be irritated by other people, feeling negativity regarding what other people believe or say is your mistake, your error, only by realizing this does your brain create a lower frequency ossillation that frees your mind from the slave labor of trying to inhibit the ideas other people are expressing so you can focus on what you want and enjoy instead

<http://www.xeromag.com/extropy.html>

Xeromag | Transhumanism? Is that some weird religion?

www.xeromag.com

Demonize External Targets for Collective Neurosis = Facism 101

Suspect was a model of collectively externalizing negativity on others because of upset expectations regarding the difference between what some thought ought to be and what actually was. drug use (super soldier methamphetamines) probably made them unable to change their expectations to accept the changing world and so they began to villify then attack, and loot every external thing, every country, even germany itself was looted by the parasite hitler.

Yeah like all these people think they believe things, they think they are talking, or writing, they think they are someone, they believe they have a self, how ridiculous, people are not witnesses at all, no witness in the brain, just braincells collecting data and coming up with fantastic ideas, oh hoho your little three pound patch work of neurons and glia has formed the ridiculous conclusion that it has had a NDE experience, hahahahaha, next up its going to say its not braincells, hahahahaha, wonder if those drugs are distorting its conclusions?

Drugs made swiss cheese out of a three pound patchwork of braincells and now it thinks the most simple explanation for mystical experiences is that its all true hahaha, it doesn't see that it doesn't make sense, it can't because the brain is swiss cheese from malnutrition, drugs, history of abuse, stress, etc...

I saw the beginning of the universe once. Yep I was there when space time began. True story, it involved an audio visual mind machine, neurofeedback, brainwave entrainment, and a large dose of lsd. Swear to god it was awesome little swiss cheese brain. I seen so much fantastic stuff. your still swiss cheese though, thats a compliment

Steve Jobs was definitely a swiss cheese head, sometimes you roll the dice, and your brain retrieves a bowl of rice. Sometimes swiss cheese head builds apple computer then kills himself with fructarian diet and waiting to long to take action on preventable cancer.

I think the creator is about to lay the smack down and kick all your beliefs in the nose, because all of everyone's beliefs are delusional hebbian learning patterns re-membered meaning stitched together from detailed expectations and criterial information driven causation.

The sun never sets on two pieces of property the same way no matter how similar they are, no matter how close together they might be, property is unique because locations are unique, so a copy of any person is never going to be the original. that said you can't upload or copy anyways because thats like copying or uploading the ocean, there is nothing solid enough to be you that can be copied, you don't exist in your head, whatever electrical & chemical activity was generated in some illconceived "copy" of your brain would immediately be different and the illusion of an uploadable self would immediately fall away.

Making a copy of your brain is about as practical as copying the milkyway galaxy, good luck with that because its going to happen in a million years

Your brain activity is changing all the time because of trillions of factors, criterial causation (information) your specific location, the angle of the light, your whole ecosystem, perhaps including gravity (shrugs) each neuron is weighing ten thousand plus sources of criteria (other braincells) to detect milisecond coincidences to adjust the electric potential firing criteria of other neurons, prepare long term memories, deliberate, calibrate, etc... so many jobs reconfigure the brain and trying to predict it might be like trying to predict the dice roll of a cube that has exabytes of possible configurations per cubic centimeter per milisecond

I hate to break this to you but you don't actually have the perception of "I" your braincells just predict that idea. You have no experience of a self, its just the story, the prediction that you have that experience, go ahead, look again, where is yourself?

Get the story out of your mind, stop the subtext that says "I am experiencing this right now" stop the writing on the airplane that says "this is your experience" stop all those stories and just experience sensations without stories. empty the mind and see with the eyes, nose, and ears. then you will see that there is only just this, no self that isn't story, just this, you are not experiencing it, you don't have a subjective experience, that's just a story

You can't upload yourself as brain activity because it's just brain activity it's not you, it's what is being sensed by the cells with no other witness, no soul to tell
maybe your brain will be uploaded some day, you still don't exist outside of being a fictional idea that doesn't actually experience anything
the fictional idea that we think is you, well there are probably lots of copies of it on other brains already, not to worry, the idea of you is probably already preserved
"Mind uploading is essentially brain uploading. That can be done."

Prove it. Maybe you will create something new. It's more likely you will zerox the ocean and print it on your 3d printer in space. By the time it was a quarter of the way printing it would be something completely different from what you began printing. Just imagining that.

1. there is no you, that is actually relevant
2. there is mind boggling complexity to the brain that, well I can't even imagine the amount of harddrive space you would need for a virtual simulation
3. the brain activity would be immediately radically different because it's in a different location, different light, different gravity, different ecosystem, and the exabytes of possible configurations in a cubic centimeter would radically differ the copy before it was done being made.
4. it wouldn't have the same priorities or wishes or memories because it would not be you, all those things are drawn live inside because of contingent criteria causing them, based on stuff that's true for you but not for your copies.

It's like imagine your a rubics cube, and you want to eat, so your configuration looks like config #13999, but you make a copy and your copy is virtual and it doesn't need to eat, so it's config looks like #4758900, and now it resembles your friend bob more than you because bob isn't hungry either.

having a common goal with your "copy" is going to take about as much negotiation as it would with anyone who resembles it's config, such as bob

if they can build a real to life simulation of you, what do they need anyone's consent for, they could replace everyone with robots, wasn't this a movie I saw recently?

<http://www.youtube.com/watch?v=7ibQvQUpMTg> uploading

THE WORLD'S END

<https://www.facebook.com/theworldsendmovie> In theaters Augu...

In studies of split brain patients, the left hemisphere and right hemispheres essentially became like two different personalities. Because there is no you that can be uploaded. removing parts of your brain and adding in artificial replacements will no doubt exacerbate your personality changes which are happening already, already there is no consistent you, you might have had both hemisphere's replaced already as far as you know, because your not the same from morning to night, let alone from year to year.

"Extropia DaSilva But split brain patients have their corpus callosum severed, the result being the left hand side of the brain (which controls the right hand side of the body) is no longer in communication with the right side of the brain (which controls the left side of the body). In my thought experiment, the patient is not a split-brain patient because the artificial half of the brain is doing everything its biological equivalent used to do, including communicating via the corpus callosum with the other half of the brain. "

"when you say 'there is no 'you'" I assume you mean we do not have fixed identities. Selves are fluid and apt to change. But, nevertheless there appears to be something consistent about me because I am treated as 'the same person' by myself and others. If my uploaded self were as

similar as the self that exists tomorrow (not exactly the same as me now, in other words, but close enough to be accepted as me by everyone) that is good enough for my personal survival."

There appears to be something consistent about you, because you are treated the same by yourself and others. Yet that very idea is like the mirage of an oasis seen by a person dying of thirst in the middle of a hot desert with no oasis. You have noticed also how almost every person see's "you" in a different way, no doubt to some you seem noble, and to others you seem a scoundrel. To some an artist, or hacker, to others a wanker or slacker, to some handsome, a romantic lover, to others ugly, a destitute fated to suffer. The consistency of you, as such, is as your ability to keep agreements, your unconscious social contracts, living up to the expectations of other minds, the subconscious beliefs that are true in one situation and irrelevant in another situation, like a drunken situation where the usual ethos goes out the window and the hung over decry the spirits of liquor. Keeping your word is what separates man from beast, provides consistency and predictability to his character and makes him likeable to others. Yet add up all the things that contribute to the consistency of you: hebbian learned patterns, neural expectations, conditioned experiential behaviors, behaviors that apply to a specific situation with specific incentives and consequences only. Is that you? Look closer, its a mirage, and there is only the desert.

"[...] you are the same YOU even if changed moment by moment but still consistent identity, same subjective experience , same point of view, continuity of consciousness, [...]"

this is the mirage, the persistent illusion, your not having the same subjective experience moment to moment, constant change is real, and the walls of visual, auditory, and abstract information are reacting to each other, there is no observer just these walls of sensory information interacting in a strange loop, continuity is the mirage, it's a story, a belief, let go of the story

mind uploading isn't realistic because these walls of sensory information interacting with each other absent any real observer are changing with the rate that everything changes in the brain, in milliseconds the upload version would branch into a different personality
there is no you, and trying to copy the walls of sensory and abstract memories is like trying to copy the ocean, it will change and the dream of a consistency will slip through your fingers

"that's not a persistent illusion, the I in this case is persistent as long as your brain is a live, we are not a different person every day, there is always continuity of subjective experience, it all arise from your brain and it's a continuous flow of Iness" your free to see it your way, free to disagree, but you have not persuaded me. I don't agree that there is a consistent self. We will leave it at that.

"> "[...] and trying to copy the walls of sensory and abstract memories is like trying to copy the ocean [...]"

It's not about replicating some explicit conceptual "you", it's about replicating the brain. The rest will follow from there."

that's what I am saying, it's about replicating the brain, and you won't because it's like trying to replicate the ocean

" if you want to have a chance to become immortal, I would recommend you support life extension research instead, your only hope is to keep your brain alive as much as possible"

here's the thing, looking forward, suppose you achieve immortality.

at some point in an immortal brains life time it will lose identification with it's own brain, then it will just be a body of cells, just like the galaxy is just a body of stars, there won't be any illusion of you to enjoy this immortality

"you are still in your body and with your brain," no, that's the illusion of a temporary perspective, there is really no you inside your body or in your brain, just braincells, blood, and patterns of data.

I've studied too much neuroscience to believe in the miraculous continuity of subjective experience.

I mean I read a lot about split brain patients, somehow you split a brain in half and each half thinks it is the continuous self, but they diverge immediately into different personalities.

You could read "Incognito" by David Eagleman.

You could read "the man who mistook his wife for a coat rack" by Oliver Sachs.

Braincells interact and they accumulate patterns, representations of the world, that become stitched together in massive brainwaves, some where in that is this idea, of a self, that is analogous to a direction, but these braincells are not an entity

Unless, wait a second

"I bunch of braincells, hereby declarith my existence as an entity inside Micah's brain, and behold in the eyes of God, and the President, I am, for gosh sakes I am a bunch of brain cells, now I would like to order a pizza, well preferably cheese, spicy, microwaved then browned in the toaster oven, with pepperoni, light on the pizza sauce because it has carbs, and hey Micah you better get to work on that document..."

oh sorry I have to cut off my inner entities now, sometimes its like my braincells have a mind of their own

no the messages are just messages, implying a directional entity, but they are just messages I swear

{{we interrupt your regularly scheduled reading to bring you this message, implicit is the direction from whence this message thus came, go to Target Micah, and buy some cheese, make sure to fill out the envelope and check for rent and deposit them in the mail, check your bank balance, and believe in the consistency of a self, that's us}}

nope nope it's just messages, you didn't fall for that did you? do you actually believe your thought messages? you think they come from a self?

yes only humor is possible at this point, no right views, no right perspectives

{{ I am the direction from whence messages come from believe in me, believe that brain cells are conscious, we must each be conscious if the messages come from our respective directions

isn't right? Pay no attention to the idea that this messaging is a mindless physical process, not that different from a mechanical process. }}

What does it really mean to consider the idea that there is no you in your braincells? no self? it means that what we are referring to is a tempo-spatial metaphor with tempo-spatial metaphors, a holonomic stitching together of tempo-spatial metaphors.

If the self is a tempo-spatial metaphor, consistent or not, then that is the self right? Well see a rock is also a tempo-spatial metaphor, everything is, that's why the experience of self, as a tempo-spatial metaphor isn't experiencing anything at all, there are just messages saying that it's observing and experiencing all this stuff.

Messages are saying this experience is being had by this tempo-spatial direction metaphor over here! This location is where feeling happens okay? The metaphor is feeling it! To which we say "yeah right, but okay, hope your feeling better soon, in that direction, you non-existent semi-consistent tempo-spatial metaphor you"

a0405z

May 25, 2012

brain complexity

people think there is a cosmos from which evolved the brain but consider that there maybe more synapses in a single brain than stars in the visible cosmos, consider also that quantum entanglement experiments seem to have proven that the future can change the past, now given that the complexity of order inside brains seems to be greater than the complexity of the whole cosmos outside brains, is it possible that the existence of brains in the future is the real reason the universe began in the past?

A wonderful friend asked me if it is possible to wipe out a memory completely. Sure yes it's possible. What's even easier then that however is becoming ok with whatever was in that memory. Sometimes deconstructing works, also disassociation works. Either path is about changing the internal metaphor, reshaping it in your mind, separating it from your idea of self, who it belongs to, who was there, what it means, how you feel about it, those things can be changed when you play with it in your mind, like distorting an image in photo shop, making it big or small, shrinking it, stretching it, adding different colors, different meanings, making the voices cartoonish if there were voices. You can say it's just a memory it's not your memory, or the meaning can have some other significance, or you can say it's really all waves of atomic vibration, or all data, and realize you can be ok with waves, you can be ok with vibration, you can be ok with atoms or all data. You can say that what you think it means is a lie, or you can imagine that you have gone back into the past and changed it, created an alternate timeline. Actually this is isn't impossible either. New experiments with quantum entanglement have shown that particles that are going to be entangled in the future will get entangled in the past, in anticipation of their future entanglement. It's as if we now have proof that the future can alter the past, but of course no one is talking about that, it's one of those oddities that people are silent about, because we are all waiting for more information.

http://www.eurekalert.org/pub_releases/2012-04/uov-qpm042312.php

Quantum physics mimics spooky action into the past

1. what we know from quantum physics is that we are literally (literally) defined by everything else
2. what we know from general relativity is that time is actually a dimension of space geometry
3. the future literally defines the past and visa versa
4. it's plausible suddenly that the video game your playing on your iphone is the reason Nikola Tesla invented alternating current in 1886

a0409z

Sep 22, 2012

(neuron, potential)

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?

Peter Rothman

Yes, it seems possible to build a mind out of things that aren't biological neurons but which at some level exhibit similar properties to neurons.

Beams of light? Well I don't know what you mean there exactly. A laser? Yes there are photonic computers that use lasers and there are some recent interesting results.

<http://www.extremetech.com/extreme/108573-worlds-first-programmable-quantum-photonic-chip>

3 hours ago · Edited · Unlike · 2

Mark Waser

Can it self-modify?

Łukasz Stafiniak

No because synapses would stop working.

Micah Blumberg

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

a0410z

why should this note be included in the book? It's speculating about the nature of spacetime with quantum gravity.

imagine that the neutrality of particles is because they are too warm, and that as the earth cools its magnetic field will grow as more of the atoms within it begin to oscillate inline with one another multiplying their netforce

earth will eventually become a magnet as it cools and as its atoms condense and align

the non-magnetic part of the EM spectrum is gravitational spectrum, it's about the oscillating curvature of space, the morphology of the vector field that has been embedded into the shape

See this video <http://medicalxpress.com/news/2012-10-fetal-neural-vision.html> this does not look like single character bits fed one at a time triggering points converted into vector mapped based memories. it looks like a morphing vector pattern being going through several stages of memory reduction in the architecture. Essentially because the burst runs out of steam, and then it leaves its vector mapped imprint. A spatial representation imprinted in the fired connections.

I hope replies reflect the subject of this group: Categories & Geometry of the Mind. Do you think meaning for intelligent beings may imply an unconscious topographical map of nodes that are themselves semantic tokens reflecting maps between points of above threshold data associations in a multi level pattern learning machine?

Burst of fetal neural activity necessary for vision
medicalxpress.com

(Medical Xpress)—A sudden and mysterious burst of activity originating in the retina of a developing fetus spurs brain connections that are essential to development of finely-tuned sight, Yale researchers report in the journal Nature. Interference with this spontaneous wave of activity could play

Like · · Unfollow Post · Share · October 11 at 1:55pm

Seen by 42

Fernando C. Boschini, Hardik Bhadani, Juan Carlos Kuri Pinto and 2 others like this.

Micah Blumberg Just imagine that when you see something, this is happening in your brain. Imagine that your having waves of sight pass through your brain tissue. Flowing in almost like water with special properties

It's not like feeding binary bits into a learning machine one at a time, it's like pouring in a data stream, words, pictures, bits, all jumbled together, and letting the structure sort it all out.

October 11 at 2:26pm · Like

Micah Blumberg The question I would have for Monica, and or Jeff Hawkins, would be, can you visualize the activity in your computer based connectome with graphics so that the activity looks like this. Would the activity look like this at all? Perhaps your visualized connectome would not have brainwaves?

October 11 at 2:35pm · Like

Micah Blumberg Do your semantic tokens (vector maps of associations) really come from emergent patterns that are imprints in the memory created by synthesized brainwaves?

October 11 at 2:36pm · Like

Micah Blumberg I like how in AN model, intuition is the emergent result from points plotted in a vector tree map that you can describe in category theory (the vector tree map not the emergent patterns). I think she describes it in C and or Java, but I think C and Java lack the fluidity that could happen in a functional language like Haskell. Where node memories can create vector

memories and The model free nature means that the concept is the memory of the tree's reaction in a sense. With Haskell and an 80 core processor one could have each node in the tree creating emergent vector maps with the other activated nodes independent of a centralized process.

I like how in AN Model, the "concept" isn't pre-thought and pre-programmed, it's learned or built by the vector tree's memory system in response to the stream of data.

October 11 at 3:20pm · Like · 1

Juan Carlos Kuri Pinto Yup. I think Haskell is the right language for the geometry of mind:

<https://www.facebok.com/groups/programming.haskell/>

Programming Haskell

The Haskell Programming Language Haskell is an advanced purely-functional progr...

See More

October 11 at 3:36pm · Unlike · 2

Micah Blumberg Regarding the film clip again: It's as if the parts of the brain creating the brainwave are the parts that have reached their threshold point, resulting in a forwarding of the excess of that energy onward. Like water that fills up buckets, and if there is more water than buckets it spills onward, in a wave of running water until the remaining amount of water no longer exceeds the threshold of any bucket.

October 11 at 3:42pm · Like

Micah Blumberg The peaks of that brainwave also appear to be spread out as opposed to convergent like you might see in a pyramid like hierarchy.

October 11 at 3:45pm · Like

Micah Blumberg Think of the edge of a letter, the edge of a box, and the edge of a wall all at the same time. Each of those edges is in a different scale. The smallest you would expect to be a vector token from the lowest part of the cortex. and the largest would be a vector token from a much higher part of the cortex, even though they are both edges. Then if you try to visualize the edge that represents a piece of the electron's potential orbit around the center of an atom (if that exists even?) and the edge that defines a section of the orbital path that the sun takes through the galaxy. (how do we know our sun isn't leaving the galaxy or headed toward the black hole at the center?) Now we have a situation where the conceptual scale for both the edge of the electrons orbit, and the edge of the suns orbit are so epic conceptually that they probably are both modeled at the highest levels of cortex, unless the association of the edge of an atom is so closely associating with small things that it gets thrown into a vector map that is a link between details from lower regions and concepts from higher regions. Maybe all the edges are size invariant, like vector graphics in a computer. Maybe doing computer vision by feeding it bitmaps is creating a disgusting scaling problem in vision learning that would not exist if "edges" in the v1 cortex were scale invariant vector patterns, that could be linked into any vector token, aka a

semantic token, that is also linked to a size vector token, and a depth vector token, and a color vector token, and a smell vector token, to produce the appearance of a multi-sensory object in stages of brainwaves.

October 11 at 4:05pm · Edited · Like · 1

Monica Anderson Words don't have well defined meanings. Phrases and paragraphs in context might.

"Waves of sight in your brain". There is no vision, smell, touch etc in the brain. Just neurons signaling other neurons. Cf. Friedrich Hayek: "The Sensory Order".

We have several visualizers. Sometimes we get waves as emergent effects. We don't program them in

Semantic tokens are indeed the result of emergence.

At the lower levels there is correspondence to words but at that level they don't deserve to be called "semantic".

Haskell doesn't matter. Number of cores doesn't matter. Single CPU with a 1+ TeraByte RAM would work well.

"The atom is like a solar system". Groovy, man.

I have clearly got you going. I had better let you sort the details out. It will take a month and a few more videos

October 11 at 7:10pm · Unlike · 4

Juan Carlos Kuri Pinto Monica, what do you think about subjective experience? (i.e. red color, rose scent, emotional pain, etc.) Will it emerge from the right connectome algorithm or is it an inherent property of biological neurons?

October 11 at 8:29pm · Like

Monica Anderson Dunno about brains but I'm not designing in anything special for any of those. Either it emerges or they'll have to do without

October 11 at 8:36pm · Like · 2

Juan Carlos Kuri Pinto Sometimes I think subjective experience is an emergent property of connectome algorithms that are complex enough. Look:

Gödel's incompleteness theorem BREAKS when your axiom system refers to Reality! The vicious cycle of self-references is broken by R...See More

Larry King Live - Stephen Hawking, Leonard Mlodinow, Deepak Chopra, Robert Spitzer - Part 2 of 3

www.youtube.com

Larry King Live, CNN, 9-10-2010 "The Grand Design", by Stephen Hawking & Leonard Mlodinow

October 11 at 8:46pm · Unlike · 2

Juan Carlos Kuri Pinto

<https://www.facebok.com/notes/juan-carlos-kuri-pinto/subjective-experience-and-godels-falsehood/10151111745682712>

Subjective experience and Gödel's falsehood

Subjective experience and Gödel's falsehood Sometimes I think subjective expe...

See More

By: Juan Carlos Kuri Pinto

October 11 at 8:53pm · Like

Monica Anderson Bah. Gödel doesn't matter until you have Models. And if you have an AI making Models then you already have won. Forget Gödel. Come to think of it, forget $P=NP$ for the same reason.

October 11 at 9:05pm · Edited · Unlike · 4

Juan Carlos Kuri Pinto You are a genius Monica! Always remember that!

October 11 at 10:36pm · Edited · Like · 3

Juan Carlos Kuri Pinto I just added to my note:

Sometimes I think subjective experience is produced by pattern combinations that are descriptions of noumena. Obviously, subjective experience is caused by combinations of electrochemical patterns. There is no significant difference between the electrochemical patterns of vision, audition, taste, olfaction, touch, labyrinth's orientation, and proprioception.

Moreover, evidence suggest the local neural circuits in most parts of the cortex all use the same general purpose learning algorithm:

- The fine-scale anatomy of the cortex looks pretty much the same all over;
- if the visual input is sent to the auditory cortex of a newborn ferret, the "auditory" cells learn to do vision;
- if part of the cortex is removed early in life, the function that it would have served often gets relocated to another part of cortex.

Now that we know specific subjective experience is not a property of some specific brain regions because there is a general purpose learning algorithm, the question is rather reformulated: Is subjective experience an emergent property of such general purpose learning algorithm? In other words, an emergent property of integrated information. Or is subjective experience an emergent property of electrochemical patterns? If the first hypothesis is correct, we could actually create subjective experience inside machines. Otherwise, if the second hypothesis is the correct one, we will be able to create subjective experience inside machines only if we replicate the crucial aspects of subjective experience at the hardware level, in other words, through imitation of electrochemical patterns.

October 11 at 9:57pm · Like

Pawel A. Pachniewski But Gödel, P versus NP etc. are very interesting and many other domains in science are just *dying* to get a paradigm shift(cognitive science, physics, math, information theory, computability, evo devo etc.). It's certainly not true there are not fascinating and important advances to be made there, many of them very relevant to AGI and artificial sentience.

Tricky business, and a few steps beyond what Monica is saying, which is correct in principle - if your AI is making models you have won and that you shouldn't be feeding your AI any models.
October 11 at 10:39pm · Like · 2

Hardik Bhadani Pawel A. Pachniewski - many of them very relevant to AGI and artificial sentience??

what does it means? if you are also saying that : if your AI is making models you have won and that you shouldn't be feeding your AI any models.

it's seems two way.
October 11 at 10:43pm · Like

Hardik Bhadani I like to ask Monica Anderson if any courses from Coursera can be use full there are now many interesting courses

for example : <https://www.coursera.org/course/geneticsevolution>

Introduction to Genetics and Evolution

www.coursera.org

Introduction to Genetics and Evolution is a free online class taught by Mohamed Noor of Duke University

October 11 at 10:45pm · Like

Juan Carlos Kuri Pinto According to Monica, Modelless AI means an AI who has no preprogrammed models in it. Such AI is rather supposed to learn and program such models by itself without human aid.

October 11 at 10:46pm · Like

Hardik Bhadani and more <https://www.coursera.org/course/humanphysio>

Introductory Human Physiology

www.coursera.org

Introductory Human Physiology is a free online class taught by Emma Jakoi, Jennifer Carbrey of Duke University

October 11 at 10:47pm · Like

Hardik Bhadani <https://www.coursera.org/course/animalbehav>

Animal Behaviour

www.coursera.org

Animal Behaviour is a free online class taught by Raoul Mulder, Mark Elgar of University of Melbourne

October 11 at 10:47pm · Like

Monica Anderson Intelligence is the ability to do Reduction (to Models). If your Ai can do that, then you have an AI.

Gödel's Theorem and questions like $P=NP$ are issues in the realm of Mathematics and hence in the realm of Models. They are both irrelevant issues in the question about whether AI is possible; they don't matter at the pre-Scientific and sub-Scientific level (when we are *creating* Models) because we're not using Math, logic or Science when we are using (Artificial) Intuition.

October 11 at 10:49pm · Like · 2

Pawel A. Pachniewski Hardik, I am saying there are many great advances to be made in the fields I mentioned, many of which relevant to AGI.

That doesn't mean one cannot, without those advances, have significant insights into what is needed for AGI. The advances would influence in some cases certain choices, open up new possibilities and so on.

If you can't see how these things mesh, the first thing you should realize is that they're wont be just one type of AGI. There are some things that will definitely prevent you from making AGI, among those are the things Monica mentions. Adhering to the right principles, is only part of the story.

Then, realize that Monica is making two simple statements: what method most definitely does not lead to AGI and what does according to her, plus what is a sure sign of general intelligence: the ability to make models. I agree with that.

P.S. Besides perhaps very ambitious narrow and thus brittle AI systems that could fool you or perhaps at least some people into being AGI or close to it - some think Watson brings us closer to AGI. I tend to think Watson doesn't. (I'm jokingly understating)

October 11 at 11:03pm · Edited · Unlike · 2

Juan Carlos Kuri Pinto But if we run simulations of our models in our minds, and we do this all the time, Gödel's theorem and $P=NP$ matter.

However, Gödel's theorem is overcome by the fact our AI capable of constructing models is not limited by a handful of models. It will be able to model an infinite number of models.

Combinatorics predicts it.

October 11 at 10:58pm · Like · 1

Monica Anderson Watson isn't AI and isn't even a step in the right direction. I know, I'm using the technology behind Watson in my day job.

October 11 at 11:02pm · Like · 3

Pawel A. Pachniewski Monica, you're using AI to mean AGI/GAI nowadays?

October 11 at 11:03pm · Like

Monica Anderson Distinctions are tricky and old habits die hard; I've never been fond of the term AGI. I prefer talking about Understanding Machines and Watson isn't that.

October 11 at 11:04pm · Like · 3

Piaget Modeler It's all about creating models from scratch...

<http://piagetmodeler.tumblr.com/>

Piaget Modeler

piagetmodeler.tumblr.com

Interested in interaction-based automatic construction of predictive models for real or simulated...

21 hours ago · Unlike · 2

Hardik Bhadani Piaget Modeler i like it !

21 hours ago · Like

Juan Carlos Kuri Pinto There is a slight error in Piaget Modeler's diagram: All those cognitive functions are not separated. They are rather fused in cortical columns and the connectome.

18 hours ago · Like · 3

Anna Nachesa The "natural" humans intuitively feel that the words per se don't have absolute meaning, because the person who produces them can a) lie (i.e. voluntarily use the incorrect word to describe something) b) talk imprecisely (i.e. unintentionally use incorrect word to describe something) c) be ignorant (i.e. use the words to describe something that is not the real situation, but just someone's concept of it). In effect, we end up having a "reliability coefficient" for different people talking on different topics (because different people have different "specialities"). The "specialization" looks very logical, assuming that cognition builds up on the already existing levels and the time for building up the knowledge is finite: to be able to learn something in detail, one has to let go of other things. This restriction might be partially lifted for the mind which has more resources than our own, of course.

On the other hand, people aren't just "accepting information poured onto their brains". They get some information (in symbolic form) and they get some sensual feedback related to it. By combining the two, they derive how to react to that information in the future. I wonder if it would be possible to simulate that second part instead of presenting the symbols as the only reality.

17 hours ago · Like

Monica Anderson That Piaget Modeler stuff looked neat until I saw the block diagram of the system. Block diagrams are a warning sign that the designers like to take intelligence apart into smaller chunks which implies a Reductionist approach. People that make diagrams of AIs typically have no idea how to implement any of the components in the diagram. A single box with a single algorithm that does it all is much more likely to be correct. The separation of the brain into lobes is a long-term optimization of higher level functionality and is of much less consequence to AI design than is the need to get the "fundamental grey matter algorithm" right.

14 hours ago · Like

Monica Anderson So the "slight error" Juan alludes to is the fact that there is a diagram in the first place

14 hours ago · Like · 1

Monica Anderson Anna, about the need for two input channels... in the brain there are only neurons signaling neurons. Why would it make a difference to any individual neuron whether the signal comes from the eyes or the skin? It can't tell the difference. This is my main argument against the Embodiment Hypothesis - that the "fundamental grey matter algorithm" cannot depend on the availability on multiple input senses for its function.

14 hours ago · Like

Monica Anderson The "Enactment Hypothesis" (that *interaction* with the environment is necessary for learning and intelligence) is also questionable but the argument is longer and I'm not done with it yet.

14 hours ago · Like

Anna Nachesa Monica, I agree, there is no difference regarding the source of the signal. What is important is that the intelligent being doesn't derive its knowledge from the symbols alone. The interaction with the environment is what might be giving a context and ...See More

14 hours ago · Like

Micah Blumberg "The "natural" humans intuitively feel that the words per se don't have absolute meaning,"

I think information means nothing, except in the context of movement.

12 hours ago · Like

Piaget Modeler @ Monica Anderson - Monica, you can build your system with organic neurons or chemicals, whilst we will architect PAM-P2 to run on digital computers. Best of luck to you in your endeavors.

9 hours ago · Edited · Like

Piaget Modeler BTW - PAM-P2 is psychologically inspired by Jean Piaget's work, and it is also architecturally informed by over twenty existing AI systems. At the end of the day, if it works, whether digital or wetware, that's what counts. Cheers!

9 hours ago · Edited · Like

Micah Blumberg Perhaps all the diagrams in Piaget can be considered part of the substrate Monica ? Isn't it possible to create a substrate that is a super structure underneath and separate from the parts that are open for raw model free machine learning?

9 hours ago · Like

Micah Blumberg The human brain for example does appear to have an organized super structure that cannot be learned via a life's experience. The input from the eyes goes to a specific region (v1) and the input from ears goes to another specific region, and those regions do not immediately combine, but they do combine at higher levels. That's a super structure in the substrate that is exterior to the work of a substrate that is just the work of a single learn algorithm. If I am not mistaken. I think you (Monica) mentioned that neuro cortical columns are perhaps incidental at this point in your research, but I don't see how that is not reductionism instead of holism in your model. A single algorithm substrate may just be another form of reductionism. You argue that the holism aspect in not creating and pre-structures in the learning area right? How is that not another form of reductionism? How do we conclude that the mind starts out "blank" (without some models in memory, perhaps from random connections, or from genetically passed connections, real general stuff.) without making the same error as all the other reductionists?

9 hours ago · Edited · Like

Piaget Modeler In PAM-P2 there are cognitive structures and cognitive functions. The (yellow, pink, and green) boxes in the architecture diagram refer to the cognitive functions. The cognitive structures (blue boxes) are monads and schemes which form "monemes" and "dynemes" (otherwise known as neural propositions). The propositions in turn form heterarchical planes which are tiered. Activation flows across these planes, and upward and downward through the tiers. (There is a forthcoming paper on this as well.)

You can find more on monads and schemes from the AISB-11 presentation:

<http://www.scribd.com/doc/51981938/PAM-Talk-AISB-11>

Cheers!

PAM Talk AISB-11

www.scribd.com

Presented at the University of York, April 5th 2011 for the Society of Artificial Intelligence and Simulation of Behavior (AISB-11) Conference.

6 hours ago · Edited · Unlike · 2

Hardik Bhadani Monica Anderson , i would say that your both arguments are related to Perception , *interaction* with the environment is necessary for learning and intelligence - yes for the sake of Perception because AGI don't have to be in a computer on a desk , it has to be with a robot that *interacting* with the world to do human level stuff, and for Embodiment argument - it is needed same for the perception otherwise he would throw his feet instead of hands when picking some objects.

20 minutes ago · Edited · Like

Pawel A. Pachniewski Micah, it doesn't appear to have it, it has it.

about an hour ago · Like

Micah Blumberg what has what?

24 minutes ago · Like

Pawel A. Pachniewski "The human brain for example does appear to have an organized super structure that cannot be learned via a life's experience. "

23 minutes ago · Unlike · 3

Hardik Bhadani Aha!

21 minutes ago · Like

Micah Blumberg It's a tricky topic. On the one hand we know that the brain has this tremendous plasticity, adaptability. You can literally plug your eyeballs into the part of your brain that is usually for hearing and in animals it has been shown that the hearing part of the brain would then start to process vision stuff, from the eyeballs. So when it comes to superstructure, we have to be careful what we mean by that. Technically any region should be swap-able with any other region, but that doesn't mean there are not regions, and topological features that matter. Let's not be reductionist in the pursuit of creating holistic AI.

16 minutes ago · Like

Pawel A. Pachniewski Technically, no, you cannot swap just any region with any other. There are limits to plasticity.

15 minutes ago · Like

Micah Blumberg Every single possible combination of human senses, in the form of synthesis has been sought out, reported, and confirmed by researchers. Every part of the neo cortex, the grey matter, can and has been actually combined with every other part of the neo cortex, it's a self similar structure, and it has amazing properties. Now as for limitations yes, in practice, having a major brain surgery as a child gives you far better odds of adaption than a major brain surgery late in life. These are things to notice and pay attention to. It might be that there are threshold points for when the flexibility of a particular region of the brain is no longer considered viable for surgery, relocation, integration, or rehabilitation with other parts of the brain. I don't know all the scenarios, there are tons of limitations yes. With recent research turning adult stem cells into health da neurons the field of what is technically possible is a moving target, what was

true yesterday might not be true tomorrow. In theory I think it's okay to say, that in theory, real AGI should be swap-able, when it comes to using any region for any cognitive process. Clearly today we are not seeing that, with people taking very different approaches between Vision and Semantics for example, but that doesn't mean we will not have an AGI that does both very well.
2 minutes ago · Like

a0412z

(oscillat, hippocampus, field, array, neuralink, observer, synap, cortex, vector, metaverse, qualia, neuron, category theory) convergence divergence transformation

The brain is strange to say the least. The EC Entorhinal Cortex might have 50k cells sending info to 1 million GC Granule Cells in the Hippocampus, and each GC is receiving data from 10k of the EC Cells. Signals are diverging & converging at the sametime.

The receptive field converges signals toward a cell, its inceptive field diverges signals towards another cell.

look up lateral inhibition or dephasing with entrainment

Neurons warping space

mass has spatial magnitude your brain is both setup to make and consider the spatial magnitude of action potentials in addition to their frequency

through multi-domain soliton waves crossing electric, magnetic, chemical, thermal, gravitational, and acoustic/mechanical/pressure waves

both the mass/energy or magnitude/frequency or amplitude/pitch or weight/occurance rate

Part of the answer to do with training data in the context of Human Neural Networks. We are trained with certain expectations. Part of it is nature.

abuse hits more "nerves (neurons&glia)" for the majority of us, combines multiple brain areas, multiplying offensiveness.

Actually this helps explain why murderers have lesions in the occipital lobes

What I mean is that violence in a 2D video game is different from violence in real life, but what you get in VR is different from both, engaging the human brain in a new way.

I'm not aware of whether what people are attracted to in virtual reality can also be correlated with neural dysfunction from brain injuries, or diseased legions from cancer, inflammation, oxidative stress etc. It would be a future area of medical research.

link Theta entrainment memory improvement capture in hippocampus + neocortex concept of time comparison for learning between different domains of unstructured data

can I show with category theory how all the wave types mechanical, electrical allow a time based synchronization of sensory modalities which are detections from different wave spectrums

Connect Michael Gazzaniga biology & symbols argument to category theory & biology

squid game started out interesting but then the plot of the squid game went in the wrong direction,
it should have been a story about testing AI weapons, specifically they never brought the AI back after that one scene it became a story of how people treat each other to achieve some goal

the human brain is a weighted matrix, a 3D matrix with multimodal sensing across phase domains
delta waves on earth

human awareness has delta waves

so when we observe a particle field it changes to match our brainwave frequency

the whole field has changed not just the observed electrons but the whole field's delta wave has become tuned because of its encounter with a delta wave observer.

think about how the television emits alpha waves, well the earth emits a wave frequency, the field of space emits a wave frequency that changes its oscillation to harmonize with our thoughts

telepathy and like oh my god I'm a computer system space is also a computer system and I'm interacting with it and you.

the inner field and the external field are being generated moment by moment as a single field

its not two different fields interacting, the human awareness as a delta field, theta field, alpha field, gamma field, and beta field is being written as one single field with the same spacetime around it, both fields are the same one oscillating vibratory field

hold on a minute and read this!

I'm visualizing taking that 3D vector field modeling tool and using it to describe the electromagnetic field around a person and within their brain overlaying a transparent 3D

volumetric video of their head captured in real time with real time changes to the vector field map representing what the bci is detecting with meg eeg fnirs fmri and dti + neuralink

I can make 3D imaging with voxels
imagine a real eye and then a voxel art eye
with equations on the voxel art

the once divergent silos of physics biology math and computation are converging again in my book

Self Aware Networks

I thought of modelling my own brain

We can make a self aware network with unreal engine, we can make the system oscillate like a real brain, representing the space that's in your brain.

What I don't understand is what stops any planet from collapsing into an all consuming blackhole at any time?

Why does reality maintain this shape at this time?

The stuff I wrote down today is like exactly how qualia works

the soliton waves traveling across synapses are not just waves they are distinct waves shaped by the cells history

If you want to reduce visibility. You can pick your situation. Lower the light on your computer monitor, which reduces visibility over distance

"At the end of the day its just an array" the brain, memory, the universe, space, spacetime mass energy is just an array that is stretching and contracting in both time and space preferring certain convexing intervals between both, aka powerband frequencies, the stuff that both our minds and space time is made out of

this is happening:

alpha waves coming from television

earth emits a frequency Solfreggo

when frequencies interact their collective action is multiples of their components distributed over a vector field that is the representation of their combined frequency oscillation

in other words the vector field of space time and the mass of space time are examples of two different spatial/temporal patterns that are the inverse of multiplying micro-frequency patterns that are multiplying when they oscillate together harmonically.

So at the end of the data the length and dimensions of the spacetime array in 3D and in time are stabilized in a sense by brainwave patterns, which are also spacewave patterns. The delta/theta frequencies of observation and attention actually entrain observed space in their frequencies, like oscillators entraining other oscillators. However this means that telepathy, sending patterns through space, is inevitable.

I'm seeing bits of my vision being played out across the screen of the matrix between the entorhinal-granule cells and the hippocampal CA1-CA3 neurons.

a0414z ctp

Sep 20, 2012

not sure if this is a duplicate, if it is I don't know where the duplicate is (dendrite, column, neuron, category theory) reply to Dean Part 2

Dean:

Only the top layer of the column has significant connections to other cortical columns (in fact nearly all connections in the top layer are to other columns).

Micah Blumberg

Known, but still incidental to my proposal.

Dean:

In addition, keep in mind that a sizable portion of neurons are inhibitory neurons.

Micah Blumberg

Known, but still incidental to my proposal.

Dean:

That is, when the spike, they have an inhibitory influence on the receiving neuron, decreasing the likelihood of its firing instead of exciting it to fire.

Micah Blumberg

Known, neurons also inhibit nearby neurons, inhibition helps noise reduction, and may improve spatial/memory coordination on many levels.

Micah Blumberg

Sometimes a v6 Grandmother neuron will fire, inhibiting a whole change of neurons beneath it. If from firing, this Neuron that is higher up in the hierarchy now represents a whole cluster, it's a SDR of the whole cluster it just inhibited. I like to use this as an explanation of intuition, you know those women who think they are psychic because ideas just seem to POP into their heads, ideas that are really big predictions and sometimes really good predictions. However information from the V1 does not always travel up through every level of hierarchy to get to v6, sometimes it goes straight there, depending on the urgency of this situation. This is explained in

neural connectivity, but what isn't explained without my theory is how v1 and v6 can even have a common dialog, how would the v6 know the difference between a v1 urgent message and v5 not so urgent message? The data transmitted has to convey more meaning than a digital pulse.

Dean:

"a single synapse or dendrite only exerts a small influence on the receiving neuron (similar to the concept of weights within a ANN).

Micah Blumberg

a small difference changes the whole shape mathematically, if the shape were an infinity, and you changed a synapse, that infinite is now infinity plus or minus the small difference, electrically speaking that is significant. Small changes are not insignificant, but in an ANN model all changes are insignificant because they are reduced to a binary 1 in the axon. If the axon does not register the small differences in synapses and dendrites then all that information is lost before it reaches any neuron it isn't directly connected to. So far the digital neuron lacks a topoi category to describe the varying "potential difference" in the electron transfer, but I think we can represent each neuron as a differential equation in the core set, and a topoi that describes both it's physical connections, it's actually radius of influence (not connections) and what it can be influenced by (including electromagnetic brainwaves that are not directly connected to it.)

Dean:

Obviously, some synapses exert more influence than others,

Micah Blumberg

it's not as obvious as you may think

Dean:

but since each is only one of a thousand (or ten thousand), it's up to the receiving neuron to integrate it with all other signals to determine whether or not to fire and with what amplitude or frequency.

Micah Blumberg

so goes the conventional explanation, but the number (ten thousand synapses per neuron on average) does not change the function. Will you also argue that if all the primates declare the earth to be the center of the cosmos, and only Galileo says that some moons are orbiting other planets that the number of scientists who agree (or synapses) defines the most likely function (earth as central or not central)

Micah Blumberg

If you think the "shape of the neuron" isn't influencing the electrical transmission before it gets transferred into the next neuron then every neuron might as well be identical. In ANN theory every neuron is identical but that vastly ignores a potentially infinite storage space for information, and a method of transmitting a snap shot, program of that spatial/temporal program to other parts of the brain.

Dean:

Generally (excluding extra-synaptic transmission), a neuron will not have any direct influence on neurons that it was not connected to.

Micah Blumberg

The collective action of neurons in v1 influence all the neurons higher up, at that scale a neuron can be like a binary on/off, but that model still ignores the potential detail in the structure (including ignoring all the detail in the dendrites and synapses) So each neuron, at least as a binary 1 or zero, at the very least, influences every other neuron in the brain, as a potential difference to the whole. Imagine that that one neuron means you see Kathy's face in the room, but if that neuron doesn't fire, then you don't see Kathy's face in the room. In this sense the firing of that one neuron effect ALL the other neurons. Your spatial temporal metaphor of the existence of you where you are right now is going to be vastly different if individual neuron's that represent arms and faces stop firing or start firing. Your whole spatial metaphor defined both by what is firing in your whole brain, as well as by what isn't firing. An integrated view of you isn't even plausible if the difference of signal neuron is not registered by the rest of your brain.

Dean:

"Only if downstream neurons are connected to these neurons will it have any influence on them at all."

Micah Blumberg

Sigh, I'd avoid words like "only" "always" "never" and any "absolute" when your discussing neuroscience.

a0415z

Jul 29, 2012

(hippocampus)

(In looking at this note from 2022 I am not going to put any religious ideas into the book, but there might be something in this note that could be pulled out, that might be interesting later, so it's in the set of notes)

the colorado batman theater shooter may have had a brain tumor or parasite in his brain the size of a golf ball

http://www.theatlantic.com/magazine/archive/2011/07/the-brain-on-trial/8520/?single_page=true

The Brain on Trial

www.theatlantic.com

Advances in brain science are calling into question the volition behind many cri...

See More

7 hours ago · Like · 1 · `

Micah Blumberg It might have been the killers cat or from undercooked meat
<http://www.latimes.com/news/science/la-sci-parasite-suicide-risk-20120707,0,6408832.story>

Study links parasite in cats to suicide risk in humans

www.latimes.com

Los Angeles Times

7 hours ago · Like · 1 ·

Micah Blumberg if you combine david eagleman's article with the article on parasites that cause schitzophrenia and bipolar disorder without any previous history of mental illness we can see that humans as a species may have been blindsighted by something that was never within anyone's control to influence, not even within the killers capability to control

6 hours ago · Edited · Like · 1

Micah Blumberg revised previous comment Wendi you may want to change your opinion or not
6 hours ago · Like

Wendiane Woodburn Even if those things were true for him....it still wouldn't mean he was evil, which is my point. I already mentioned biological possibilities and I do believe that extremist religious backgrounds can also contribute to mental illness, or be a sing of already being mentally ill.

6 hours ago via mobile · Like

Wendiane Woodburn Sign

6 hours ago via mobile · Unlike · 1

Micah Blumberg sigh :/ around the whole topic in general, its just sad, I deleted my comment about his extremist christian background/community which may or may not have played a role in contributing to the disturbed state of mind he was in. what I see personally is a lot of young people raised with a hardcore christian bible based world view are not prepared for adulthood in the real world. when the adults in your community all think the rapture is coming in the next five years they do little to prepare you for the realities of a long life on this planet as a human being. disabling their own young with a worldview that is freak out scary and largely incompatible with the real world that we all live in. I don't know if extremist religion played a role in disabling his rational mind leading to this shooting, but it wouldn't surprise me either.

5 hours ago · Like

Micah Blumberg "Even if those things were true for him....it still wouldn't mean he was evil" I was supporting your point, not arguing against it!

24 minutes ago · Like · 1

Micah Blumberg Perhaps evil the result not the cause? perhaps evil is the arrangement of molecules, not the will of the soul. Consider this article,

http://www.nytimes.com/2012/07/29/opinion/sunday/neuroscience-and-moral-responsibility.html?_r=1

Neuroscience and Moral Responsibility

www.nytimes.com

A look at whether anomalies in the brain can let us off the hook for certain behavior.

22 minutes ago · Like ·

Micah Blumberg Lets say someone was born with a bad brain, and or acquired tumors and or parasites that altered the state of the brain so much that this person was hard bent on choosing deadly violent criminal activities. A clear risk to the public. How can this classify as evil? Sin in the catholic context means to miss the mark, to commit error, making mistake, to choose wrongly, or more simply to have done wrong. Even if we can't agree in some objective absolute definition of right and wrong, I think most reasonable people would say that what the Colorado Killer did was wrong. If someone thought that what the Colorado Kill did was right, then they might classify as evil. Evil meaning aligned with missing the mark, committing error, making mistake, choosing wrongly. That's what the devil is Wendi, theology does not ask the question, was this mistake a matter of brain malfunction, or a soul rebelling against G-d the idealized abstract entity. The reason is theology doesn't ask that question is because it's not concerned with the mechanics of the brain. The person's decision, regardless of whether it comes from their soul, or from a malfunctioning hippocampus being squeezed by a tumor, or bad brain chemistry from junk food that has resulted in a malnourished frontal lobe that is failing to inhibit lower impulses like violent desires, and violent coordinated planning, or a parasite that has grown to the size of a human finger eating braincells destroying the links that preserve rational action while squeezing the amygdala to create a constant survival mode for the distressed person doesn't matter. What matters is when we begin treating evil as a medically treatable condition. When evil is recognized as disease, the court system and the medical system will merge together.

a0417z

Apr 27, 2014

(semantic, category theory)

Sergio Pissanetzky

Micah, You seem to be asking about the famous binding problem: how things bind and become invariants, where semantics and scaling come from, why fractals and power laws are so abundant in nature. Here is what I can say. Take a causal set (S, w) . It has a corresponding permutation groupoid, which induces a group-theoretical block system on S . In addition, and here comes the interesting part, partial order w induces a partial order on the blocks, and the block system itself becomes a (smaller) causal set. This property of recurrence should explain hierarchies, fractals, power laws, scaling, semantics, emergence, AGI.

Tom LaGatta: Why am I referring to nature? The fundamental principles of causality and symmetry describe information in its most fundamental and pristine state, and they apply to all physical systems, including the brain, human or otherwise, which is the only system where we

observe the phenomena of intelligence. For any system described by a set S of boolean state variables with values {past, future}, the principle of causality is formalized by a causal set (S, w) . And the principle of symmetry, or rather the breaking of symmetry which is necessary for structure to exist, is derived from the fact that partial order w breaks the original symmetry of S .

Yeah, that's a good place for the more AI-oriented parts of your question.

The specific question "is there any notion in category theory that indicates preferential logics" is about the only part which is well-suited for this forum. The answer is yes: preferences are well-modeled by partial orders (see the Stanford Encyclopedia of Philosophy entry on preferences). Because of the reflexivity and transitivity assumptions, a category can be modeled by a pre-order: we write $x \leq y$ if there is a morphism $x \rightarrow y$.

Being a partial order requires the antisymmetry constraint, which means that if $x \rightarrow y$ and $y \rightarrow x$, then x and y are isomorphic (not necessarily equal).

Hope this helps. Even once you represent preferences computational, there is a host of other problems, including incomplete information, hierarchies of belief and bounded rationality.

////////////////////////////////////

(Looking back on this note from 2022 I am pretty sure I saved this because the discussion barely begins to abstractly think about the binding problem

<https://www.sciencedirect.com/topics/neuroscience/binding-problem>

from the perspective of functions between categories that might contain sets or topologies.

The binding problem:

"by Margaret Livingstone and David Hubel in 1988. These authors proposed that different visual features (specifically, color, motion, orientation, and retinal disparity) were analyzed in anatomically separate processing streams. These streams would originate in different types of ganglion cells in the retina, run through different types of layers in the visual part of the thalamus, and enter different layers of the primary visual cortex (V1). Staining patterns for cytochrome oxidase (CO), an enzyme whose presence is associated with increased metabolic demand, were supposed to provide the anatomical scaffold for further segregation in V1 and the adjacent area V2. For instance, color would be processed in the CO-rich 'blobs' of V1 and then passed on to the 'thin stripes' of V2 and finally the putative 'color area' V4. Similarly, the motion stream would run through the 'thick stripes' of area V2 and on to the putative 'motion area' MT. Early single-cell studies largely supported this model.

In the Livingstone–Hubel model, different visual features are segregated into different anatomical compartments, and each feature is processed by a specialized subset of cells. The visual system is thus viewed as disassembling incoming visual information into their component features. This model has been massively popular, and its central tenets are still taken for granted by many researchers. Accordingly, many reviews of the binding problem use the disassembly metaphor as a point of departure: If the system dismantles incoming information

into its component features, how does it later reassemble the processed features into perceptual objects?

However, more recent research has undermined many of the central tenets of the Livingstone–Hubel model." The article goes on to say that the areas of the Visual Cortex are not really segregated as once imagined by researchers. Even so, the question might be well how does visual information combined with auditory information exactly? That is another perspective on the binding problem. Some information is going in through your ears, some is going in through your eyes, some is going in through your nose, your mouth, your skin, how does the brain bind it together into a conscious representation?

Ultimately the best way to think about how features detected by the neural networks of our brain are bound together comes from thinking about Neurons Syncing like Fireflies as discussed in the book Sync by Steven Strogatz and from thinking about big groups of oscillators interacting with other oscillators as discussed in the book Rhythms of the Brain by György Buzsáki combined the two books provide both a low level and a high level conceptual background for how information might be bound together in oscillations, with information clustering because of how the physics of oscillators work at all scales. At the level of regular cells coincident firing in receptors can trigger the cell to unlock some specific learned (or evolved) reaction (that might be encoded in dna, or it might result from the current state of the cells information configuration represented by its protein structure at that moment in time) at the neuron level that coincident firing is not just at the receptor level, but also at the dendritic level, and with pyramidal neurons also the soma might have its own sensory thresholds that are different from the dendrite, which make pyramidal neurons the most sensitive sensors in a sense, with the most flexibility for sensory representation, and signal transmission.

The key thought about where the observer is inside the mind, where is the person inside who is watching the brain's representations, is to think of the flow of information in the brain as a series of arrays, with each array seeing part of the picture, and the oscillating activity at different scales, from spikes to phase changes to big brainwaves and dipoles is the thing that binds together what each array in the brain is seeing as information passes through it, so you perceive what you perceive, and that includes a representation of your hands and your sense of self as the body of causation behind your hands.

a0419z

May 16, 2014

is outside metrics, explicitly. So there is no metric of categories, that's interesting because if the human brain does categories/directories it may actually have a real metric between categories. Different brains may have different metrics between categories. it would be interesting to see what those differences actually are in physical terms.

the hierarchical looping oscillating neural network from inputs to outputs in the human brain can be thought of as having a natural directory structure for semantically seperating concepts into

branches, or branches of nodes or branches of neurons, so that learned representations have a home, an area, spatially organized

this is why humans are innately great at understanding different contexts and the different rewards & consequences in each context, so in videogames you can be violent, but in real life its not acceptable, because there are different rewards and consequences in real life than in videogames

a0420z

Note Created Oct 3, 2012, 8:13 PM

Abram Demski

I have written FAR TOO MUCH on this topic, over at my blog. :) However, I more often invoke undefinability rather than incompleteness:

http://en.wikipedia.org/wiki/Tarski's_undefinability_theorem

Any system powerful enough to describe arithmetic cannot describe its own semantics.

Tarski's undefinability theorem - Wikipedia, the free encyclopedia

Abram Demski Sample:

<http://dragonlogic-ai.blogspot.com/2009/08/climbing-mountain-undefinability-is.html>

Anna Nachesa Unless a different logic is possible.

Tuesday at 1:07pm · Like · 1

Abram Demski Yep.

Tuesday at 1:21pm · Like

Juan Carlos Kuri Pinto

Sure, it breaks. Godel's problem states no axiom system is capable of representing objective Reality due to the limitations imposed by the universals used. Definitions are self-referenced. But what happens when the combinatorial nature of patterns is capable of representing more patterns than all the subatomic particles in the Universe and such combinations are descriptions of noumena? The vicious cycle of self-references is broken. Leonard Mlodinow, the coauthor of The Grand Design, also thinks so.

<http://www.atheistmedia.com/2010/09/larry-king-live-stephen-hawking-leonard.html>

Abram Demski

What little I know of "grand design" has me thinking that the philosophy of it is rather bad... (and you are supporting that conclusion with this information...) :/

"Godel's problem states no axiom system is capable of representing objective Reality due to the limitations imposed by the universals used."

Only if you want "objective reality" to include *all* universal generalizations, rather than just all particular facts + some universal laws which determine the structure. So, for example, you can *run* a Turing machine with a finite physical symbol system (plus arbitrarily much physical memory). But incompleteness prevents you from knowing the result beforehand via any finite

physical symbol system (as others have pointed out). Similarly, the universe can run on a finite number of laws (with potentially arbitrarily much 'memory' for them to act out on). The incompleteness comes if you want to be able to deduce different kinds of facts from the laws. Godel's theorem prevents a finite symbol system from answering all such questions.

Micah Blumberg

I read some of your blog Abram, really good stuff.

Lots of different viewpoints integrated in to comprehensive dialog. Actually I was overly impressed. You have a lot of reasoning skill so far as I can surmise in this short period of time. It is possible to predict your next thought, if you have a simulation of yourself running. Yes the prediction could be wrong, the result might not be exactly what it was in the simulation. However that's a margin of error calculation. Another kind of prediction program can create a bell curve of possible things you might do, given the margin of error in the prediction program, and the margin of error in the possible results. So with many close predictions you can be highly likely to have at least one of your predictions match your expectations as to what your next thought will be. It might not be perfect, but it can work. Defying the notion that it can't work or isn't possible. Pretty much I can predict that around 7pm tonight I'm going to be thinking about a meal, with protein, or amino acids. I can predict a lot of my next thoughts/future thoughts, often close to accuracy, and I notice my mind is running simulations, imagining that if I go into such and such a place and say and do the right things I could end up with a free something or discount something, I have all these conditional programs, driven by incentives, and I can describe my thinking process in Haskell programming language, it's not complicated.

Abram Demski

There definitely seems to be a sense in which it is possible to "get around" incompleteness via probabilistic reasoning. However, there is also a sense in which it is not. The Kleene hierarchy establishes a series of harder and harder kinds of problems. The halting problem is in the first level to which incompleteness applies. It is possible to converge to the right answer by gradually increasing the belief that a program does not halt, but switching to belief that it does halt, if we find that it does. (There should be more structure here, since we can reason about whether or not the program looks like it will halt, but that is something to start.)

Even this is suspicious, because there is no computable probability distribution which corresponds to the probability that a randomly chosen program will halt given that it has not halted after X amount of time. This means that we will have bad expected error no matter what distribution we use. (Many programs will surprise us.) But laying that aside, the approach seems OK.

The level above the halting problem is the convergence problem. Supposing that a Turing machine never halts, we may still be interested in knowing what the output tape says after arbitrarily long. Many algorithms work by a series of iterations which we hope converges to the value we want. But we can't know in general whether the iterations have converged, or are merely making progress very slowly. The method I gave of "solving" the halting problem above is a type of convergence computation: we know that the belief will eventually converge to the right answer, but we don't know whether it has converged (unless the program we're observing halts).

There is no way to assign probabilistic beliefs to convergence such that we are guaranteed to converge to the correct belief.

This is just 2 levels of the Kleene hierarchy. It gets much worse with each step upwards. So there is a kind of incompleteness even for fallible, probabilistic beliefs.

Micah Blumberg

"Gödel proved that there are ALWAYS more things that are true than you can prove." Knowing everything is not the same as proving everything.

Gödel's Incompleteness Theorem says:

"Anything you can draw a circle around cannot explain itself without referring to something outside the circle – something you have to assume but cannot prove."

You can know things that you cannot prove. You can know and refer to things outside the circle of what can be proven.

Neither "Incompleteness theorem", nor the "light speed limit" can remove the possibility of a sort of ultimate mind.

"A recursively improving AGI cannot have a fully consistent and complete model of its own mind and workings either."

Why not? A sufficiently intelligent AGI should be able to build models, simulations, charts, multidimensional graphs, to model it's mental process with perfect consistence. Modeling it's mental process and modelling it's mental results until it's model becomes a perfect mirror of it's results, with both the original and the simulation creating the exact same result at the exact same time. A mirror of itself. There doesn't seem to be any reason why an AGI could not build a mirror of itself, perfect in every detail. The mirror would do everything the AGI does, exactly. I think the problem is that by definition a model is less than a perfect mirror representation. The model is a sparse distributed representation by nature. If it was perfect it wouldn't be a model, it would be a duplicate. So the language creates the imaginary limitation.

Abram Demski

Micah, you cannot consistently believe this sentence. ;)

Your hypothetical superintelligent AGI cannot consistently believe this sentence.

(Of course you can pull the same Gödel-style trick on me. For each intelligent being, there is a true statement which that intelligent being cannot consistently believe...)

Jordan P Holcombe

"Gödel's theorem is a physical fact about symbol-manipulation systems of a specific sort."

Mathematics should be an extension of epistemology. There are many self-referential entities that exist: sentences, algorithms, artwork; but that doesn't mean we should include the mechanics of self-reference as part of our means of definition. Knowledge is strictly hierarchical.
about an hour ago · Unlike · 2

Abram Demski

Jordan, my present view is that some types of self-reference should be included in the means of definition while others should not. A sketch of the idea is here...

<http://lo-tho.blogspot.com/2012/10/impredicative-truth.html>

about an hour ago · Like

Micah Blumberg

These super facts that people keep mentioning are super because they are over qualified statements, with over qualified premises. As such they can be impressive to consider but only as long as you self limit your consideration to the premises given in the sentence.

Then people want to run with the super conclusion as if the super assumptions and presumptions that led up to the conclusion were universally true and or constant in all situations "If ultimate mind means omniscient, i.e. knows everything, then yes, such an entity is impossible"

"because that takes infinite resources."

how does he know that an ultimate mind doesn't take exactly the amount of resources that exists?

there are all these assumptions, and presumptions that qualify an imagined scenario where something isn't possible, that are based on other assumptions and presumptions, and if you chase the rabbit hole down far enough you find out that there is eventually an unprovable assumption outside the circle of what is possible to prove, reference to "incompleteness". that is supporting the entire stack of knowledge.

Then it all comes undone, the logic isn't validated after all. Like the string that you pull that unwinds the entire knitted sweater. Perhaps all logic in the universe just unravels at some point if you trace the root assumptions it's built on.

"if A is true, then C cannot be true, if this statement is correct, then it can't be false." assuming that statements can only be either true or false, and not true and false, and not neither true nor false. for example.

Recently in the news, researchers are claiming that a new quantum physics theory is making plausible the notion of simultaneous backwards and forwards causality. As if A is causing B and B is causing A at the same time.

Jordan P Holcombe

"It came from just talking about basic number theory."

I stick with the idea that my objection is not a reaction. Rather, I hold that the confusion arising from Godel's Theorem co...[See More](#)

Math Excerpts

ronpisaturo.com

This article provides a philosophic development of the fundamental concepts, p...

Micah Blumberg

Unless you define ultimate intelligence as the maximum possible intelligence. As soon as you say the ultimate mind is impossible, you are assuming that the definition for the ultimate mind exceeds what is possible in the first place, obviously it cannot exceed what is possible in the first place, but being the ultimate mind, by definition, is still the ultimate mind with the ultimate knowledge that is possible.

Unless that's the definition of G-d as philosopher's define it, the ultimate intelligence that is possible, (not the ultimate intelligence that isn't possible)

Abram Demski

Do you think incompleteness in itself is a sign that something has gone wrong? Would you prefer a theory of numbers for which every assertion that can be made is either provable or refutable? This is possible; for example, primitive recursive arithmetic.

http://en.wikipedia.org/wiki/Primitive_recursive_arithmetic

This rejects the quantifiers. I'm not sure what exactly you think comes from "thin air" in the peano axioms, but perhaps making everything essentially finite by removing the quantifiers helps?

Do you think incompleteness in itself is a reason to think something has gone wrong? That is, would you prefer a foundation for mathematics in which every statement can be proven yes or no?

we can stop talking about logic and just talk about the halting problem. This is also proven by self-reference, but it is more obviously "about physical stuff" perhaps? Would you also have an objection to that form of the incompleteness result?

Micah Blumberg

The conclusion that the "ultimate mind as deity" is impossible (a conclusion many people make) is based on the presumption that the definition for the "ultimate mind as deity" doesn't include as a priori that all descriptions that describe what the ultimate mind is must be true, and if those descriptions are not true or not valid, then they do not accurately describe the ultimate mind as deity, but they do not invalidate the ultimate mind. Only the invalid description of the ultimate mind is what becomes invalidated.

Perhaps the ultimate mind is an imaginary ideal that has functional attributes, then it requires less resources to run than the mind it interacts with needs to run.

Thoughts effect our neuro-physiology, so numbers have functional attributes that can effect your behavior, if you believe there is a man eating lion behind door number 3, and cake behind door number 2, and a free car with a chance of lion behind door number 1 those numbers (ideals) are effecting your behavior.

If someone was to describe the "ultimate mind as deity" you can say it's imaginary, but you can say that physics is an imaginary ideal too.

Some how this ideal, as a description, applies to almost everything.

Isn't description another ideal with functional properties? Isn't everything a description on some level? Or in another view, isn't everything a belief? Isn't everything a prediction about what's there? Isn't everything a physical pattern?

Deity may not exist in the conventional sense of our modern world, but since when is the conventional sense worth anything?

Deity may only exists in the ideal sense, which has functional implications in terms of behavior, assuming that all ideals have functional implications in terms of behavior, based on the notion that the mind is for movement.

a0428z

(neuron, error detection, magnetic, field, optogenetics) The Hammond Error Correcting Codes, mean that we could reconstruct the memories in the entire brain from a subset of codes

so I posited the idea that if you put a new dopamine neuron, converted from a stem cell, and replaced a damaged neuron, that the existing connection patterns would re-emerge, because of the oscillations from the neural circuit would re-encode that neuron. So it's memory is invariant

that's like losing a hard drive, but the rest of the internet being able to restore the contents of your hard drive, as long as your hard drive was in sync with the rest of the internet in the first place somehow

because the oscillator can act as a neuron error detection

can you explain in more detail how you are detecting a large scale neural oscillation with light, you are detecting the oscillation in blood flow.

The paper is called Diesel2p mesoscope

but if you could detect the magnetic field during optogenetics you could try to identify how changing individual neurons is changing the magnetic field

a0432z

(cascade, perception, neuron, dissipation)

My intuition is that everyone is writing a fictional universe. A universe that is their approximation of reality, their rendering of what's real and what's not real.

Micah Blumberg Monica Anderson From Encyclopaedia Britannica:

"Many researchers (being human) expected that the human brain would show a tremendous information processing capability. Interestingly enough, when researchers sought to measure information processing capabilities during "intelligent" or "conscious" activities, such as reading or piano playing, they came up with a maximum capability of less than 50 bits per second. For example, a typical reading rate of 300 words per minute works out to about 5 words per second. Assuming an average of 5 characters per word and roughly 2 bits per character yields the aforementioned rate of 50 bits per second. Clearly, the exact number depends on various assumptions and could vary depending on the individual and the task being performed. It is known, however, that the senses gather some 11 million bits per second from the environment."

6 hrs · Like

Micah Blumberg This analysis is not correct. A person's reading, writing, and speaking rate does not yield a valid bits per second rate of "consciousness" from which you can compare to some estimate of bits that come through human senses per second. One example of why this analysis is not correct is that a person may be thinking of a dozen different things while they are reading or reporting, the reading and reporting may be triggering a cascade of 11 million bits of "conscious" information in the brain each second for example.

6 hrs · Like · 1

Micah Blumberg How do you look at a skyline with your naked eyes, a skyline that could not be captured in full detail by the most high resolution camera on this planet, a skyline that could not be displayed in full resolution on the high resolution screen that exists on this planet, and considering the resolution of what it would actually take, to capture and display that skyline on a computer, and the number of bits that image has to actually be, even with the best compression, and after estimating all that still think, for even one second, that your conscious experience is less than 50 bits per second? Totally ridiculous.

6 hrs · Like

Micah Blumberg I did an estimate of potential brain activity in 2008 and I think my number was 5 exabytes per millisecond. I will have to revise that number with what I now know but 50 bytes per second is insane, even 11 million bits per second seems insanely slow.

6 hrs · Edited · Like · 1

Micah Blumberg So what is the explanation for how researchers split the quantity of "conscious" data away from "unconscious" that split seems to be an area where one should be skeptical again.

6 hrs · Edited · Like

Monica Anderson "A person's reading, writing, and speaking rate does not yeild a valid bits per second rate of "consciousness" from which you can compare to some estimate of bits that came come through human senses per second."

I don't think this was how these experiments were done. If you want to refute these experiments then you should check out the original papers.

Also, the numbers could be off by four, even five orders of magnitude (!) and still support the idea that the majority of the brain's processing is subconscious.

6 hrs · Like

Mike Dougherty How much data moves around the Internet every second? Even after you generate a bunch of new data to constrain how you are going to measure it, what good is it?

Does it really take all the insane chatter of humanity's synergy to properly identify t...See More

6 hrs · Like · 1

Micah Blumberg "I don't think this was how these experiments were done. If you want to refute these experiments then you should check out the original papers.

Also, the numbers could be off by four, even five orders of magnitude (!) and still support the idea that the majority of the brain's processing is subconscious."

The premises are invalid. You can't measure some external data, about reading or reporting performance and use that to glean internal data about how many bits are in a person mind. That's ridiculous. I can't believe you can believe that is plausible.

3 hrs · Like

David Bergman Micah Blumberg: totally correct. To try to extract only the, for the test, useful bits (pun?) is definitely skewing the processing estimates of consciousness by a few orders of magnitude...

3 hrs · Edited · Unlike · 1

Micah Blumberg An analogy that illustrates why this premise is invalid is if some researcher proposes to figure out how fast the brain operates internally, by measuring a persons external performance while riding a bicycle, or running in a marathon. How fast you respond externally while playing a sport is not a reliable indicator of some clock rate estimate for how fast your mind ticks. It just isn't plausible.

3 hrs · Like

David Bergman Since I did use 1200/75 baud modems a lot, the thought that my consciousness was limited to something close to the upload speed of that modem seemed absurd. I knew that I could even type faster, and, yes, I rarely focus my whole mind on typing, nor anything else. At least not when not in a (paradoxically named) mindful state.

3 hrs · Unlike · 1

Micah Blumberg The idea that external performance mirrors internal performance reminds me of the idea behaviorism actually. The human brain has more connections than there are stars in this galaxy, its billions of times more extensive than a strand of dna in a sense, and that could mean that a physical performance is a massive reduction, a massively reduced subset of the brains real performance, including the brains real "conscious" performance.

3 hrs · Edited · Like · 1

David Bergman Micah Blumberg: yes! And ignoring that dualism (poor choice of word, but it's getting late) might be a hindrance in achieving (meta...) models for proper AGI. E.g., one *might* devise far too simplistic models, yielding processing in that very low "extrinsic" range.

3 hrs · Like

Micah Blumberg If you see the sunset, in high resolution, is that in your mind's eye not at least the trillion plus bits that it would be if it was on a computer screen? what kind of compression reduces an image in the minds eye to less than it could possibly ever be on a computer?

How then can a researcher count the words per minute of how fast you read and square that against the resolution of a stereo rendering of San Francisco that you are seeing in real time. A rendering that in Virtual Reality, in the max resolution, with the best compression, would never be reducible to 50 bits per second. Right?

At once you have a different bit rate of "conscious" activity for seeing the world in 3D than you do after solely measuring a person's "performance" while reading and or writing.

2 hrs · Edited · Like

Micah Blumberg Even if the numbers are off by only a hundred trillion orders of magnitude, the data should still be THROWN out because the premises have no ground to them AT ALL.

The idea that conscious activity is 1 percent of brain activity has zero basis in facts. It's not even a reasonable estimate, because there is no reasonable estimate from the facts that are facts.

2 hrs · Edited · Like

David Bergman I actually thought of creating an AI company based on compression techniques solely, both for theory and implementation. It was called gzip9. Just was reminded when you mentioned the compression. Well, our brains seem to have quite decent semantic compression, but hardly at the level of shrinking those trillion bits down to a few tens

2 hrs · Unlike · 2

David Bergman I *do* think compression theories are underused in AI, and AGI, by the way.

2 hrs · Unlike · 1

Monica Anderson *shrug* The numbers aren't important; we *know* there is a large Reduction going on since we can't consciously "see" individual retina "pixels".

1 hr · Like

Monica Anderson "Well, our brains seem to have quite decent semantic compression, but hardly at the level of shrinking those trillion bits down to a few tens"

Well, you will notice that if you try to reconstruct the original trillion bits from the "tens" or how many there are, you will make many many mistakes. It is definitely lossy - there's definitely lots of bits missing.

1 hr · Like

Karoliina Salminen If it was not lossy, in traffic I would need just one glimpse to one direction and I would know if there was other traffic immediately. In reality my perception is so deficient that I need to look several times.

1 hr · Like

Pawel Pachniewski It's so lossy our brain in fact compensates for it so we don't get too alarmed.

1 hr · Like

Micah Blumberg "Well, you will notice that if you try to reconstruct the original trillion bits from the "tens" or how many there are,"

the reconstruction effort is like measuring your external performance again to estimate your internal clock speed and bandwidth, doesn't make sense

1 hr · Edited · Like

Monica Anderson So what is the alternative to my conclusion? That Conscious Reasoning plays a significant part and Subconscious Understanding is unimportant?

1 hr · Like

Karoliina Salminen Monica already knows it, but say it again to others, we are still on such stone age with AGI that at this point modeling conscious reasoning does not make any sense. Making subconscious function working is the first priority and will produce a loy of usefulness as it is already, as sub-human intelligence and this level of intelligence is feasible already today.

54 mins · Unlike · 2

Micah Blumberg there are dozens of alternative models to what could be happening but I wouldn't propose that.

31 mins · Like · 1

Micah Blumberg I like this idea from Geoff Hinton about Dark Knowledge, what if the child brain is like the super computer made out mostly base level classifiers, and the purpose is really to just eliminate the most improbable conclusions. Then the adult brain is the reduction, the model with far fewer base level classifiers, it keeps what the network learned with less memory, but far faster, and with just as much accuracy.

3 mins · Edited · Like · 1

Karoliina Salminen But is that somehow contradictory to subconsciousness? I think what Hinton is saying, it is not at all contradictory. Except for the supervised part, supervised learning is not learning and not AI.

22 mins · Like

Micah Blumberg what is slippery is the idea that we have to divide subconscious from conscious in clear measurable delinations. in my model of the brain any neuron is both, first a base level classifier that then also can become part of conscious neural circuit given the right set of attractors. the limits of how much of the brain can become conscious at once are in my opinion like energy constraints, or a matter of thermodynamical limits to the operation of the mind based on its structure, for example heat dissipation, and energy consumption rate, etc...

18 mins · Edited · Like

Micah Blumberg in my model you can't say well the conscious/subconscious ratio is a fixed percent of the base level classifiers like 2/98, because its more like a tidal that comes in and goes out again, and the limit is like an energy constraint

11 mins · Edited · Like · 1

Karoliina Salminen In mfm we do not model these as two separate functions, because that would be a model. Less bad model than modeling the world but a crude model nonetheless, oversimplification to the actual circuitry.

11 mins · Like

Micah Blumberg if you have base level classifiers in a hierarchy you can give them special properties such that when a certain threshold of them exhibit a certain activity level, that group can self organize to create some additional functionality, similar to a feedback loop, but more like a dissipative system.

6 mins · Like

a0433z

Apr 29, 2012

(neurotransmitters, layers, cerebellum, neuron)

read 'on intelligence' (2004) by Jeff Hawkings

Terry Allen

Ok if the Mind is not a Mystery then lets have a detailed explanation. Whilst your at it it Micah maybe you could tell me how when a person is afflicted by a serious brain injury their personality and skill change. Where is the prediction there?

Micah Blumberg

Read the book I recommended first then we can talk.

Micah Blumberg

I have explained it to dozens of people, and my own book is nearing completion.

Micah Blumberg

We have a prediction based consciousness. Every moment is a sequence of expectations. What you see is a spacial metaphor built by expectations. In other words its a narrative (of beliefs) that defines the difference between red and the moon and your foot. Without this inner narrative you would not know the difference between your foot and the moon, and the color red. Bertrand Russell's philosophy failed when Godel proved it wrong. Didn't you read "Godel Escher Bach" and "I am a strange loop" by Douglas Hofstadter I have much more to share about the mind and consciousness, but first you must read 'On Intelligence' as a prerequisite.

Micah Blumberg

Russel's philosophy was built on the foundation of his math, his math was proven wrong. There is a wrong when your philosophy is purported to be built on a view of mathematics that is proven false. What freewill? Scientific determinism is reality. There is no mechanism of choice in the brain. Everything you think, or do is a reaction to the deep interconnected layers of meaning that are shaped by the life experience. I have answers for every question, answers that go very deep. However if you really want to know, show me, by reading 'on intelligence' first.

Micah Blumberg

:)

We have a prediction based consciousness. Every moment is a sequence of expectations. What you see is a spacial metaphor built by expectations. In other words its a narrative (of beliefs) that defines the difference between red and the moon and your foot. Without this inner narrative you would not know the difference between your foot and the moon, and the color red. Bertrand Russell's philosophy failed when Godel proved it wrong. Didn't you read "Godel Escher Bach" and "I am a strange loop" by Douglas Hofstadter I have much more to share about the mind and consciousness, but first you must read 'On Intelligence' as a prerequisite.

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Micah Blumberg

physics is the creator, physics results in every form, every thought, every belief, every tree, every action, ever skyscraper, every result, physics is all powerful, omnipresent, and contains the information that builds everything.

a0434z ctp

Hopfield argued that recurrent neural networks could have attractors or nodes that drive oscillations, causing patterns to loop. The concept of attractors is essential to my idea about how active memories encoded & developing live in a brainwave can drive human choices.

Neuronal Ensembles 2021 Webinar https://www.youtube.com/watch?v=VzO8e_f2Hk8

In this talk there is a slide called "Cortical-Wide Neuronal Assemblies" he has a chart to show where brain activity has changed, and these changes were tracked with MEG Magnetic Encephalography, but interesting the chart looks like a sparse distributed representation SDR but also it might remind you of information theory, because the number of changes are small, rare, or sparse, which means they are more meaningful because of their sparsity or rareness, the same idea works with a single cell, and it's receptors, a small percentage of its receptors might meaningfully identify a pattern that the cell has learned.

In a slide about Data Processing he talks about extracting the amplitude from cortical current dipoles (assuming as measured with MEG, MEG dipoles are different from EEG dipoles) so he is talking about high level variations in points measuring dipole activity with MEG and that is what makes up his chart that reminds me of a sparse distributed representation, at a high level of abstraction variations in Magnetic dipole activity represent some sort of brain state change or memory state change at highest level of abstraction representing massive neural assemblies that include major brain areas, cortical columns, major junctions, but the important part to keep in mind is that this is just one level of brain state representation in a multi-scale heirarchical brain

state. So what happens at the single neuron level or at the cortical column level matters for storing memory patterns that are not in focus at the moment. By looking at the macroscale brain activity with EEG, MRI, MEG or with some other tool you can begin to guess at what is happening at the microscale, ie which areas of the brain are more active, when this happens in EEG studies they call it "EEG Source Localization" EEG also captures high level dipole activity, but the source of that activity can be localized as deeply as the thalami, which is about as deep as anyone needs to go into the human brain.

Human beings haven't even begun to unlock the powerful capabilities of non-invasive medical imaging. You are gonna be shocked when you realize what's possible!

John Hopfield talks about metaphors on cell assemblies. He talks about memory as a point in high dimensional space, a memory being a stable point in activity of the brain's neural network. However Hopfield is not saying that the brainwave is literally where the attractor point of the memory is stored, but the brainwave oscillation is a perfect place for storing a live state of active human memory, in each interval of time.

Models of the Mind

Chapter 4

making memories and retrieving them
The hopfield network and attractors

each iron atom forms a dipole, a miniature magnet with one positive and one negative end

heat unsteadies these atoms flipping their magnetic poles around at random.

we should test an electron spin with applied heat to see if we can flip its spin

on a microlevel, this means many tiny magnets, each exerting a force in its own direction

but as these forces work against each other their net effect become negligible

when you zoom out this mass of mini magnets has no magnetism at all

as the temperature dips below 770 C Celsius / Fahrenheit 1,418 F however something changes, the direction of each atom is less likely to switch, with its dipole set in place the atom begins to exert a constant pressure on its neighbors, this indicates to them which direction they too should be facing, atoms with different directions vy for influence over the local group, and eventually everyone falls in line one way or the other. The net force is strong. The previously inert block of iron becomes a powerful magnet.

Philip Warren Anderson who won a nobel prize wrote a famous essay titled "more is different" the behavior of large & elementary particles it turns out is not to be understood in terms of the properties of a few particles that is the collection of many small particles, only through their local interactions can produce a function not possible in any of them alone
physicists have formalized these equations and used them to explain the behaviors of glass, metal, and ice

In the late 1970s John J. Hopfield,
saw in these mathematical of magnetism a structure akin to the brain

Hopfield used this insight to bring under mathematical control a long lasting mystery
the question of how neurons make and maintain memories

Richard Cmond wrote 2 books on the science of memory
In contrast: Cmond proposed that memories acquired by an animal could be passed down

Richard Semon's Theory of Memory
DANIEL L. SCHACTER, JAMES ERIC EICH, AND ENDEL TULVING
University of Toronto

In the first decade of the 20th century, Richard Semon put forward a theory of memory that anticipated numerous recent developments in memory research. The theory is discussed both in its
historical context and with reference to modern ideas. Semon's theoretical concern for retrieval phenomena is particularly noteworthy. Several reasons are suggested why the theory is virtually unknown today.

https://scholar.harvard.edu/files/schacterlab/files/schactereichtulving_semontheory1978.pdf?m=1442250540

engram, the enduring, although primarily latent, in the irritable substance, or the physical changes in the brain that happen when a memory is formed

the influences that awaken the nemic trace or engram out of its latent state
into one of manifested activity

John Hopfield 1990s caltwch biophysicist

neurons and earthquakes
earthquakes have a threshold for firing
and it is interesting that measuring seismic activity is the same technology as EEG

Neuronetics

a0435z

Note created Feb 19, 2014

(neurotransmitter)

I got into a random conversation with some woman at the mall the other day. She is majoring in mathematics of all subjects, about to begin studying calculus. I told her I did neurofeedback and she wanted my business card. A card that is now almost two years old. Later after she was gone I really looked at that old card again. What it promised, what it was all about, what inspired me in the first place. I had a lot of skepticism. It drove me deeper into my research. I've had amazing experiences but that wasn't enough. I needed to understand the mechanics of what was happening. How neurofeedback and brainwave entrainment effected braincells, metabolism, spiking, frequencies, neurotransmitters, cortical thalamic loops, large brain structures, and large regional activity. More than that, I needed to know what it was doing to a person, to a neuromorphic dynamic attractor soul. The past two years have been like falling through a seemingly endless rabbit hole, with each new scenario more strange, more frightening, and more interesting than the previous. It seems like some new bigger idea has to peak in my mind, totally overtaking it, becoming dominant, displacing other ideas, as a pre-requisite to another threshold of the mind. So I find myself flying, quite without realizing it, a revaluation is taking place. Here I was trying to hold on, and all I needed to do was let go.

a0437z

May 1, 2013

(neurotransmitter)

imagine the wholebrain is a series of coordinated reflexes designed to maximise the consumption of neurotransmitters in many different categories of possible circumstances my awareness is my sanctuary, its the holy temple of the "I am" meme. my sanctuary shall be clean, purified, I will root out all types of negative thoughts, I will keep my temple clean there has been a conceptual shift about the mind since I posted this, its as if all thoughts including negative thoughts are contingency plans the mind created, codes meant to maximize some value in each situation, the purification process is the new reflex

////////////////////////////////////

Jan 21, 2018 (electromagnetism, emotion) Wow your thread got a lot of responses. Are you in a dark place or something? The thing is no one needs a reason to live. People live automatically without needing any reason, this because people are dissipative systems, isomorphic to a vortex, a system that needs to maintain its own equilibrium, because of the fundamental interactions, gravity, the strong nuclear force, the weak nuclear force, and electromagnetism.

Micah Blumberg What is your dog or cats reason for living? Animals don't need reasons, they just are. Humans don't need reasons, they just are. Okay so if I accept your point, my counter point is that humans just are empathy and compassion at the root level, there again no reasons at all are needed for existing, one just exists as empathy, one just exists as compassion, no need for any reasons. At this point existence is just the result of physics. and also in my counterpoint there is no dismissal of empathy and compassion What do you think emotion is?

There is a Buddhist idea that at the core one is pure awareness, and that awareness is pure compassion, this is root level once all delusions have fallen to the way side.

I also like the idea of the non-dual meaning not two. So what if all the ideas of emotion, compassion, empathy etc are not spiritual in nature, but instead they are physical, defined in terms in physics and biology.

One further idea of non-duality can be to say that perhaps the ideas of spirituality cannot be other than physical ideas, and that even information has a physical reality, because there are not two things.

If there are not two things then emotion must be physical, and if emotion is physical then it is governed by physics.

The dissipative system that is a human, isomorphic to a hurricane, is the root state of being, aligned with the root state of awareness, if one is awareness, and if one is truly compassion.

In my view one has to relate emotion to physics. Feel free to join my group, if you like thinking about how to define emotion, not only in terms of physics, but also in terms of computation
<https://www.facebook.com/groups/IFLNeuro/>

////////////////////////////////////

I was thinking today, June 12, 2022 about my dream in which the brain could be understood in two ways, one divided into four primary areas that spin up independently and then link when needed into whole brain activity, and I was thinking about self control, and self correction as a way of considering the thoughts that one area of my brain might be procedurally generating, and then having some other area of the brain re-consider those thoughts to validate or dismiss them. Using one part of the brain to check, validate, sum, compare, and improve the thought process generated by another part of the brain. This is what I think it means to have self-control, to not just have thoughts and act on them, but to re-consider one's own thoughts to make sure they are good, in the context of Plato's concept of "The Good" like a good circle that one might draw verses an attempt to draw a circle that is not a good circle, but a flawed attempt at drawing a circle.

a0438z

(NeoMindCycle)

Some trivia for my facebook friends. It's not really obvious to me how many people know this but the name of my company is Neo Mind Cycle, it's a company that is still in stealth mode which is why you don't hear about it, it's the parent company of Silicon Valley Global News, and VRMA Virtual Reality Magazine, and the company exists to create the software architecture for Self Aware Networks and Nerve Gear which is an ideal for Brain Computer Interfaces. The book I am writing is very much in alignment with the work I've dedicated my life to doing, via this company.

a0439z

(engram, holograph)

Holographic Engrams, that are encoded phase patterns that become the components of a holographic distortion change when new inputs enter the brain and change the tonic oscillating phase pattern

the brains scattered representations are holographic in the sense that representations for every learned memory are learned collectively by the whole brain, similar to how a group of fireflies can act as a single sensor

detecting the temporal coding variances in each others flashing oscillator discharges which bump their fellow oscillators towards threshold or inhibition

a0440z

imagine a light bulb only instead of light its the rendering of consciousness
inside one light
but now imagine its spread out over many lightbulbs
and each one is just one pixel of light

imagine one neuron represented a point, the next represented where nothing was, and the third represents a contrast like a color
so with a three neuron minimum you could have a distinction as deep as color
I suggest the color is encoded as a phase or a wave signal in the synapse

multiply that time
its arc could be subtle shaped by quantum gravity

can we systematically analyze what is happening across cells at both the individual and at the macro collective scale at the same time, instead of decades of piece by piece lets have a systematic whole understanding of cell biology

disclaimer: this commercial is transparent government funded propaganda designed to create subliminal messages in the environment that inspire potentially crazies to see ideal examples of human behavior painted in videos & pictures throughout San Francisco.

then show a mom & pop walking a son on a leash, with a mask, a muzzle, and irons making the childs arms useless, the child is padded.
like an image of speed racer

the human brain creates a holographic reality experience for itself via mechanisms it does not understand at birth but can learn through education

Each person could be said to be an instance of the cosmos, and when 2 or more people meet those are two or more universes meeting. Every person is there own universe in the sense that they are a dissipative system or a vortex in the universe that happened at a relative time compared to everything else that converges at the starting point in an every present absolute now moment that is eternal.

a0441z

(links)

reference video: john hopkins 3d synapses in mice https://youtu.be/Msp_REcFME8

<https://medicalxpress.com/news/2021-12-scientists-mind-blowing-tool-millions-brain.amp>

DeepMind's New AI With a Memory Outperforms Algorithms 25 Times Its Size

By Edd Gent - Dec 20, 2021 29,378

Bigger is better—or at least that's been the attitude of those designing AI language models in recent years. But now DeepMind is questioning this rationale, and says giving an AI a memory can help it compete with models 25 times its size.

<https://singularityhub.com/2021/12/20/biggers-not-always-better-deepminds-new-language-ai-is-small-but-mighty/>

Point Clouds - 'One important yet unsolved issue for learning on point cloud is that point clouds of the same object can have significant geometric variations if generated using different procedures or captured using different sensors.'

<https://arxiv.org/abs/2112.09343>

Researchers at Australia's Cortical Labs harnessed hundreds of thousands of human brain cells grown on top of arrays of microelectrodes, teaching the biotechnological hybrid they dubbed 'DishBrain' to play a single-player version of old-school 'Pong'. They then compared the speed with which the mini-brain picked up the skill with that of artificial intelligence (AI). The human brain cells beat their rival hands down, getting the hang of the game in just five minutes compared to the 90 minutes it took the machine to catch on.

<https://www.rt.com/news/543663-human-brain-cells-outdo-computer/amp/>

a0442z

(sdr, phase, atp)

Ring network, is SDR like, meaning that the variations in its phase patterns will be toward similar patterns if any, and not towards very different patterns.

Perhaps Granule Cell Dendrite inputs can be considered ring network like

given that a dendrite can learn to responds to certain firing sequences, and be resistant to others

Analog Phase Memory why analog

3DP3 AI learns to do pose estimation with five images of an object

<https://scitechdaily.com/new-artificial-intelligence-system-enables-machines-that-see-the-world-more-like-humans-do/>

3DP3

<https://arxiv.org/abs/2111.00312>

LFN

The new machine-learning system can generate a 3D scene from an image about 15,000 times faster than other methods.

https://scitechdaily.com/breakthrough-ai-technique-enables-real-time-rendering-of-scenes-in-3d-from-2d-images/?utm_source=TrendMD&utm_medium=cpc&utm_campaign=SciTechDaily_TrendMD_0

Light Field Networks have high network energy efficiency because they continue to oscillate the same pattern until a change happens

nothing changes if nothing changes

LFN Light Field Networks

<https://arxiv.org/abs/2106.02634>

NTA Nonlinear transient amplification in recurrent neural networks with short-term plasticity

Fixes Hebbian learning network excitation problem with inhibition

<https://elifesciences.org/articles/71263>

<https://elifesciences.org/articles/71263>

The macroscope magnetic wave in the brain could serve as an attractor for its own oscillation by providing macroscopic regional stimulation of ATP in local oscillating groups of neurons. Right so its not just individual neurons that can get ATP rewards but also entire groups if their collective magnetic energy which is going to be coupled with the representations of many distributed patterns intersecting on some abstract cross subject concept, like a pattern that is in the clouds, matching a pattern on the ground. (a dog shape in the clouds reference google deep dream generator)

if you could draw a 3D brain map of delta oscillations area compared the theta, compared to Alpha etc

For EEG we should collect all of the neurons noise, don't eliminate any of that, feed that into our 3D graph neural network, that has the goal to predict your brain wave state in 3D

eeeg brainwaves permeate space in 3D so why don't we see a map of them

Wow I just thought of something that you can't find anywhere. I could be the first to do it. But its complex. Thinking...

I could make a 3D model of the brain that is just brainwaves, or just electromagnetism

Self Aware Networks (book price \$99)

A book that explains how your mind works changes how you see yourself, and even if the book is incorrect on some detail it still changes how you see yourself. The price is worth it!

This book is actually three books in one, the first is about the human mind, the second is about brain computer interfaces, and the third is about artificial intelligence.

a0443z

entities have been programmed with youness weness Iness themness themmess - self aware networks

why is it wavy

so imagine that the universe had four possible states, where nothing is off off, then there is on off, off on, and on on. but imagine that the set of what is possible and not possible is the default state of the universe, and that nothingness is just one of four possible states. Like the universe has only a 25% chance of being nothing but a 75% chance of being something, therefore it is something, but now it has a 2/3 chance of being half on and half off, and so the universe had a greater chance of being in a state where you had

kabloom

like a flower opening, a ring neuron network, floods with the color red, this representation is being used in a scene somewhere

Karl Friston free energy predictive coding, a birds brain

your brain moves toward the most energy efficient

****Pattern learning is modality invariant****

*because each neuron could be processing up to five different soliton wave frequency bands, mechanical vibrational tactile acoustic taste, smell emotion feeling sparse point cloud density representation,

I am this oscillation configuration pattern

for a moment I pretended that I could not stop wanting to kill myself, and I specifically I could not stop the thoughts of wanting to kill myself

what is interesting about a hologram is that it is a phase field right? guess what neurons are processing? phase changes

a0444z

waves theta waves are overlapping inhibitory patterns that effect action potential sequences patterns in a robust overlapping way

the brain could be an energy efficient rendering engine where most of the tonic oscillations are like shadows of recent patterns, ready to fire because they represent cyclic stuff you think about daily

so if you think about the brain's cycles over the day it makes sense that your neurons might have likely thought & behavior strategies sort of encoded as active tonic scripts in the background awareness of your mind ready to shift into activation

but with Theta and other tonic power bands I think observation is sort of always on represented by the theta oscillation developing over the course of the day. It's interesting to then think of Thresholds of the Mind in terms of how your brain activity, over time can result in major brain changes, break downs and reorganization of data.

the cosmos is also a finite state machine

with off off being able to happen once in infinity

because there is an on on state which is all possible states on. and inbetween are two opposite on/off or off on states, and these states of the cosmos are composed of all the possible states of the cosmos between off off and on on

those states consist of a wave at maximum density compression & kinetic energy

and the same wave at maximum scattering amplitude dissipation and angular momentum

from the perspective of base for the off off & on on are 50 percent of the possible states, but I supposed that inreality each possible instance of off on or on off state where some part of the cosmos is in a mass & time amplitude crunching state while some part is in a high frequency expanding mass dissipating state.

however the harmonic oscillator feature of space means that oscillators will clump together, being attractors to other oscillators, or being sometimes attractors to more organized oscillator states.

So the cosmos goes through the same process of natural selection that organisms go through with oscillators combining in novel ways developing increasing more complex information configurations overtime.

space that oscillates together stays together until it is forced to oscillate apart, ie quantum entanglement. measuring one gives you the spin of the other because they were oscillating together in a splay state.

a0445z

(sensor, hebbian) (sensor, hebbian) (sensor, hebbian) single sensor theory
what if the universe began in the moment that it was observed as a concept by a future storm on the planet jupiter that had an existence that was possible because it was in a sense an argument about the odds of non-existence vs existence being astronomical and infinite in comparison.

In terms of the potential alignment of future oscillations.

Single sensor theory

the brain & body as a single sensor system

sensors that oscillator together extend each other's reach

a galactic workers union

that negotiates and approves and regulates the prices of labor to protect against predatory work conditions such as forced labor, human trafficking, serfdom, and unacceptably low wages for the value provided.

a0448z

Sep 3, 2013

(ATP, endorphin, dopamine, transmitter, conjecture, synap, emotion, semantic, neuron)

Robert Karl Stonjek No, this is wrong. Neurotransmitters such as these are links in a chain, so to speak. It is like suggesting that we only travel in order to burn fuel, because that is what happens every time we drive. (Micah Blumberg says "nt might be represented as the sand in the waves under the ocean.")

These neurotransmitters are not pleasure, but links in a chain of events that result in the feeling of pleasure. That the system can be short circuited at this point only shows up the vulnerability of the system.

10 hours ago · Unlike · 16

Marlicia Travis What about oxytocin and Relaxin?

10 hours ago · Like · 2

Filip Gęsiarz Technically speaking, dopamine is related to wanting/craving reactions, and liking/enjoying is more related to opioid, endocannabinoid, and GABA-benzodiazepine neurotransmitter systems <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756052/>

9 hours ago · Like · 8

Suzanne Fisher ...Was hoping to boost the overall system with a light-hearted MEME

9 hours ago · Like · 3

Ted Grabowski "Oxytocin, Oxytocin--We Love our Oxytocin!"

Ted Grabowski's photo.

9 hours ago · Like · 7

Robert Karl Stonjek You win the lottery and are happy.

I can short circuit this by simply telling you that you had won the lottery and you would be happy. Or I can short circuit the system even further and simply change neurotransmitter levels and you will be happy.

What *really* makes you happy? Clearly the fake measures are transient and inconsistent with the reality of your actual situation. But we like short cuts (hence TV, alcohol etc...)

8 hours ago · Edited · Like · 3

Micah Blumberg hey remember endorphins and acetylcholine

8 hours ago via mobile · Like · 3

Marlicia Travis Yes I was thinking about ACh too. Aren't they all wonderful!

7 hours ago · Unlike · 1

Marlicia Travis Did you know that if you use endorphins the right way during labour it minimizes the pain phenomenally. Drugs that make you feel good

7 hours ago · Unlike · 1

Diana Cryder I got it, Suzanne

5 hours ago · Like · 2

Michael Gabriel Song To be dreadfully nit picky, it's not serotonin and dopamine, but their appropriate receptors that impart the euphoric experience. Depending on the receptor these neurotransmitters also have the capacity to signal unpleasant thoughts and feelings

2 hours ago · Unlike · 2

Marlicia Travis Yes they do. Its the nerves that have it. Those lovely little excitatory nerves!

2 hours ago via mobile · Unlike · 2

Marlicia Travis Feelings.....

2 hours ago via mobile · Unlike · 2

Robert Karl Stonjek There must be some mechanism by which a stimulus from one sensory modality can, under some conditions, stimulate a number of unrelated modalities.

If I *tell* you something (eg 'I Love You') then those warm loving feelings (or the 'fight or flight' re...See More

2 hours ago · Unlike · 1

Emil Bohman what about just pure experience?
about an hour ago · Unlike · 1

Radek Stupak this is oversimplification. also, what about endorfines?...
about an hour ago · Unlike · 1

Radek Stupak and what about oxytocine?...
about an hour ago · Unlike · 1

Micah Blumberg oxytocin
about an hour ago · Like · 1

Micah Blumberg I already said endorphins, but what about endolphins? just kidding
about an hour ago · Edited · Like

Radek Stupak yeah, endolphins!
about an hour ago · Unlike · 1

Radek Stupak and dopabonobos.
about an hour ago · Unlike · 1

Micah Blumberg "what about just pure experience?"
How about no there is no such thing as pure experience.
about an hour ago · Edited · Like · 1

Radek Stupak well, the only way to answer that question is to have a pure experience... but
that's beyond the language and logic of science, i guess.
about an hour ago · Like

Radek Stupak (but that doesn't mean there is no such thing, it may only mean that science is
not capable of grasping "pure experience")
about an hour ago · Like

Radek Stupak (yet?)
about an hour ago · Like

Micah Blumberg no I mean the language is problematic, incoherent, meaningless, how could
anything not be also pure experience? who is to say what is and what isn't pure experience, the
question itself is nonsense
about an hour ago · Like · 1

Emil Bohman If I smell a flower, neurotransmitters is more like a gateway to bring about the full
experience in my mind, right?

about an hour ago · Like

Micah Blumberg you can't quantify pure experience, or even experience if you can't separate it from something that isn't experience, or experienced in some way

about an hour ago · Like

Radek Stupak i know what you mean. but what i mean is that some things exist beyond any language and thus speaking about them seems incoherent or nonsense, though it doesn't prove that those "experiences beyond language and logic" don't exist or are nonsense.

about an hour ago · Like

Micah Blumberg at somepoint experience is everything, and experience equates to everything, so what your really asking is "what about just pure everything?"

about an hour ago · Like · 1

Micah Blumberg "what about pure everything?" is a nonsense question just like "what about pure experience?" is a nonsense question.

about an hour ago · Edited · Like

Radek Stupak and pure everything is cosmos and so far nobody really knows what cosmos in it's absolute is.

about an hour ago · Like

Radek Stupak (universe)

about an hour ago · Like

Robert Karl Stonjek A system to distribute the feeling to otherwise unrelated modalities. This 'crosstalk' is very common in human consciousness and is much broader than the simpler emotions mediated by neurotransmitters.

For instance Beethoven symphony No.6, the Pastor...See More

about an hour ago · Like · 2

Micah Blumberg The nerve is the axon right?

about an hour ago · Like

Radek Stupak and music is a form of language.

about an hour ago · Like

Black Square Radek Stupak Nah, it ain't. You need syntactic forms and mappings onto semantics. Music doesn't really work like that.

about an hour ago · Edited · Like

Micah Blumberg It's the nerve that feels, and the result of that feeling must be after the extra electrical potential has passed to the synapse, and that's when the neurotransmitters are released into other cells. So the neurotransmitters are sent out after the feeling has happened.
about an hour ago · Like

Black Square Robert Karl Stonjek Whereas the ultraviolence after hearing the 9th is purely dopaminergic
about an hour ago · Like

Micah Blumberg Orange you glad I didn't say dopabanana? My comment was right on time, like Clockwork.
about an hour ago · Edited · Like · 1

Robert Karl Stonjek Stockhausen and John Cage stimulate the LSD receptors (assuming we have such things)...
about an hour ago · Like

Micah Blumberg Receptors mold themselves to receive specific neurotransmitters as if they were adapting to receive nutrients, like nicotine. So if LSD becomes a neurotransmitter, receptors will adapt to LSD, then you have LSD receptors. The receptor change must coincide with a structural change that effects with the criteria that determines when a neuron fires and in response to what types of patterns a neuron will fire.
56 minutes ago · Edited · Like

Black Square To be a neurotransmitter, it has to be synthesised by the brain, among other things. Part of the structure of LSD has a tryptamine backbone, as does serotonin. It activates several serotonin receptors because LSD can fit in the active site and stabil...See More
56 minutes ago · Unlike · 1

Robert Karl Stonjek Yes. And there is a very wide variety of neurotransmitters, they are not a separate class of molecule. There is a gas (NO) and several hormones in the mix!!
53 minutes ago · Unlike · 1

Black Square Incidentally, the drug amyl nitrite (poppers) works by breaking down into NO in the bloodstream.
52 minutes ago · Unlike · 1

Micah Blumberg Isobutyl nitrite works the same way??
49 minutes ago · Like

Micah Blumberg What about ATP, can ATP act as a neurotransmitter? Can anything?
48 minutes ago · Like

Radek Stupak Black Square music has got it's own syntactics. it doesn't have semantics (at least in its' conventional meaning).

47 minutes ago · Edited · Like

Micah Blumberg answered my own question <http://www.ncbi.nlm.nih.gov/pubmed/16487603>

Historical review: ATP as a neurotransm... [Trends Pharmacol Sci. 2006] - PubMed - NCBI
www.ncbi.nlm.nih.gov

PubMed comprises more than 23 million citations for biomedical literature from M...

See More

45 minutes ago · Like · Remove Preview

Micah Blumberg on topic fasho <http://www.thurstontalk.com/.../>

ATP: Your Energy Source And Neurotransmitter

www.thurstontalk.com

Submitted by David Overton We used to think fat

43 minutes ago · Like · Remove Preview

Black Square Yes, all alkyl nitrites work in the same way. The main difference is that the number of carbon atoms in the alkyl group determines how easy the NO can fall off.

43 minutes ago · Unlike · 1

Micah Blumberg what about Jalapeno Poppers, do they work the same way? (joke)

42 minutes ago · Edited · Like · 1

Black Square See the Neurotransmitter article on wikipedia for the criteria for being a neurotransmitter.

Drugs are exogenous, so they're not neurotransmitters. Also, although, e.g. DMT is produced by the brain and some (as yet, unsupported) conjectures suggest it can reach high enough levels under certain conditions to stimulate receptors, it does not do this under normal physiological conditions. Thus not a neurotransmitter.

13 minutes ago · Edited · Like

Black Square No, those you stick up your arse and your heart rate goes bonkers while you wait for the toilet to become free.

40 minutes ago · Like

Robert Karl Stonjek Drugs are not neurotransmitters but either stimulate neurotransmitter release (eg psychoactive drugs used to treat depression) or mimic drugs (I wonder what stimulates nicotinic receptors).

But drugs are not neurotransmitters. Indeed, many neurotransmitters will not even cross the blood-brain barrier and must be synthesised in the brain from precursors (I think).

36 minutes ago · Unlike · 1

Marlicia Travis drug (drug)

1. a chemical substance that affects the processes of the mind or body.

2. any chemical compound used in the diagnosis, treatment, or prevention of disease or other abnormal condition.

3. a substance used recreationally for its effects on the central nervous system, such as a narcotic.

4. to administer a drug to.

33 minutes ago · Unlike · 1

Micah Blumberg Black Square says "See the Neurotransmitter article on wikipedia for the criteria for being a neurotransmitter.

Drugs are endogenous, so they're not neurotransmitters."

Wikipedia article on neurotransmitters says...See More

Neurotransmitter - Wikipedia, the free encyclopedia
en.wikipedia.org

Neurotransmitters are endogenous chemicals that transmit signals from a neuron to...

See More

33 minutes ago · Like · Remove Preview

Marlicia Travis <http://medical-dictionary.thefreedictionary.com/drug>

33 minutes ago · Like

Marlicia Travis Since when has Wikipedia been a valid source? Just saying

32 minutes ago · Like

Black Square @Micah Blumberg Sorry, a typo.

@Marlicia Travis In the context of providing the 'highest level of folk knowledge for general use', then always. It's only unsuitable for citation in an academic context.

When has looking words up in dictionaries been a substitute for academic knowledge?

9 minutes ago · Unlike · 1

Micah Blumberg yeah but what is the typo because it seems like all these unreliable sources are contradicting Black Square & Robert Karl Stonjek's notion that drugs are not neurotransmitters, it actually seems that they are

6 minutes ago · Like

Micah Blumberg What is happening to your braincells right now? (humor)

3 minutes ago · Like

Robert Karl Stonjek In science and medicine, 'drug' is assumed to refer to something introduced into the body. Neurotransmitters, including endocannabinoids which are similar to cannabis and endorphins, which are similar to opioids, are not considered to be drugs.

3 minutes ago · Unlike · 1

a0449z

Note Created Feb 15, 2014, 1:20 PM

(dendrite, synap, neuron)

Micah Blumberg

Neurons are transmitting multi-dimensional waves that have frequencies and amplitudes. Far more information is transmitted than is realized in Grok's one dimensional sparse distributed representations made up of one's and zeros.

Like · · Share · Yesterday at 10:26am near San Francisco, CA · Edited

Seen by 14

Angela Ronson, Chase and 2 others like this.

Angela Ronson ...AI won't go as far as some want it to. It's because of this.

23 hours ago · Unlike · 1

Micah Blumberg To me this says current AI models are over simplifying the situation and leaving out a ton of information. Yet this knowledge may allow the development of newer and better AI models that vastly exceed current limitations.

12 hours ago · Like

Chase

i have some mathematical models for neurons which function through transmitting information via frequencies, amplitudes, tone color etc, in harmonic sequences and wavelength "filters" which determine whether a neuron is excitatory or inhibitory. the sequences are representations of neural pathways. very brief and put simply but im going to bed right now, ill explain more later

12 hours ago · Unlike · 1

Angela Ronson

All AI has is binary code- ones n zeros. It's never gonna get more.

52 minutes ago · Unlike · 1

Micah Blumberg

AI code that is based on the brain, like comp neuro, assumes that the neuron is the core unit of computation in the brain.

I think the focus is wrong.

Instead the synapse is the core unit of computation in the brain, the ndma receptors and the dendrites help recognize and sort coincidence patterns, transmitting a wave across the axon to another synapse which breaks down the wave into ion deposits (sodium etc....) this allows synaptic calculations to control the amplitude and frequency of axon potentials, but reset if, when, how frequently another neurons fires, and whether it will be inhibitory or excitatory.

The synapse allows neurons to react to coincidences (multiple simultaneous or near simultaneous spikes from other neurons, or bursts, rapid spikes from a specific neuron) and coincidence detection is how brain cells can react to information. We know that cells ONLY react, they do not act, so coincidence detection allows information to drive brains.

Famously coincidence detection is neuroplasticity. When neurons fire together they wire together! The wiring is the spike, and it's very short term temporal wiring, meant to be on and off as needed, like a beat. So the important work of the brain is not modeling axon potentials and neurons as computer models do today, instead the important work is in modeling the synapse. I mean specifically the neurotransmitters, because the action potential is just a temporal link, a machine can do it.

about a minute ago · Edited · Like

a0450z

(dendrite, dopamine, synap, neuron)

Cocaine Use Linked to New Brain Structures: Possible Mechanism for Drug-Seeking Behavior in Humans Identified

Aug. 25, 2013 — Mice given cocaine showed rapid growth in new brain structures associated with learning and memory, according to a research team from the Ernest Gallo Clinic and Research Center at UC San Francisco. The findings suggest a way in which drug use may lead to drug-seeking behavior that fosters continued drug use, according to the scientists.

<http://www.sciencedaily.com/releases/2013/08/130825171724.htm>

Dendrites (from Greek δένδρον déndron, "tree") are the branched projections of a neuron that act to conduct the electrochemical stimulation received from other neural cells to the cell body, or soma, of the neuron from which the dendrites project. Electrical stimulation is transmitted onto dendrites by upstream neurons (usually their axons) via synapses which are located at various points throughout the dendritic tree. Dendrites play a critical role in integrating these synaptic inputs and in determining the extent to which action potentials are produced by the neuron. Recent research has also found that dendrites can support action potentials and release neurotransmitters, a property that was originally believed to be specific to axons.

<http://en.wikipedia.org/wiki/Dendrite>

Cocaine is known to block reuptake, and the excess dopamine leads to an enhanced reward effect. Cocaine is also known to make the cells in the nucleus accumbens, which receives signals from the VTA, more sensitive to cocaine. It was already known a protein called brain-derived neurotrophic factor (BDNF) in the VTA region of the brain enhances the reward response to cocaine.

<http://medicalxpress.com/news/2012-10-morphine-cocaine-affect-reward-sensation.html#nRlv>

The brain's tactile and motor neurons, which perceive touch and control movement, may also respond to visual cues, according to researchers at Duke Medicine. The study in monkeys, which appears online Aug. 26, 2013, in the journal Proceedings of the National Academy of Sciences, provides new information on how different areas of the brain may work together in continuously shaping the brain's internal image of the body, also known as the body schema. <http://medicalxpress.com/news/2013-08-movement-neurons-brain-internal-image.html>

a0452z

Sep 7, 2014

(criteria, causation, neuron)

you lack only criteria satisfaction causation * a new idea, the only thing that causes muscles to move, and dollars to be spent, is criteria satisfaction

criteria satisfaction causation, when cells are satisfied by information criteria, muscles move

I think criteria causation, the process that allows neurons to become pattern detectors, is how information becomes reasoning which drives choices and decisions. So it's the criteria satisfaction causation that makes people choose this or decide that. This idea is a fusion of choice and determinism really. So to answer your question, if a person didn't choose to be single by choice then they are not in the driver's seat of their own life, they are letting circumstances decide their fate, all of which is an illusion anyways, the powerful person, who has really good fate, is forced by criteria satisfaction causation, to believe that they are making really good choices and living in a choice universe. While any person who is single who doesn't think they are single by choice basically doesn't have any money, or any power. Yes it's my choice to be single, although criteria detected by my nervous system is the reason behind my reasoning.

a0453z

Jul 31, 2013

(criteria, causation, emotion, cortex, neuron)

Rimaa Vsbhatia Meta

How can we understand the human mind unless we have truly conquered it?

Micah Blumberg

The metaphor of conquest really has nothing to do with the reality of what is going on in your mind. You might as well conquer the ocean while your at it.

Rimaa Vsbhatia Meta

I hardly think conquest is a mere metaphor, Micah, to be isolated or compartmentalized as an isolated concept with no connection with the "reality" of what is going on in one's mind. If one were to conquer fear, for example, can one determine with certainty that the mind alone does it?

Ihaperate Wake

How do we know when we have truly conquered the mind?

Micah Blumberg

Fear is a story like any belief, a sequence of tempo-spatial patterns that represents a remembered casual relationship now projected into the future as thought. The idea of conquering fear invokes the motor cortex and the amygdala together which has nothing to do with the eventual prescription. Teacher wants to help others conquer fear, but fear is a good emotion, with a positive intention. Teacher is spirit teaching spirit. Teacher is destructive by pushing change into minds she cannot understand. Change is not necessary. Learning about how change is done internally is useful. Conquering is the wrong metaphor for understanding the mind. We need not place new preferences into the minds of others. There is no need to conquer.

Ihaperate Wake

The mind takes in so much stimuli during one's waking hours and, depending on the individual, there may be a variety of factors that may act as stressors to one's ability to think clearly and logically. Calming the mind through yoga, meditation etc, could be a way of conquering or taming the mind to focus on what is happening in the moment.

Rimaa Vsbhatia Meta

Ihaperate, when you have fully conquered it, you have a deep inner satisfaction that you can by yourself cross all the hurdles life puts in front of you with an equanimity and inner recognition that is so powerful that you know exactly what you have to do in life, and how to do it, and give your body, mind, heart and soul into doing it right to the very end--at all costs. You know who you are, why you are here, and what you have to do, to the best of your ability.

Samantha Atkins

I mostly agree, Rimaa. And this side of fully conquering it I remember what my father said. "Choose and go for it 100%. If you are wrong you will figure it out. You will learn something and not spend so much time second guessing yourself in any case."

Samantha Atkins

I don't think the conquering is actually necessary so much to deciding as it is to fully abiding by your decisions.

Ihaperate Wake

If something in the mind needs conquering, there must be a 'war' going on in there, then.

Ihaper Te Wake

The 'war' could be doubts, fears, procrastinations, etc.

Rimaa Vsbhatia Meta

Micah, your assertion that a teacher is destructive by pushing change into the minds of students she cannot understand is, I feel, based on your assumption that the individual cannot be influenced into changing himself/herself, as the brain does the work itself. At the same time, you describe fear as a "good emotion," and may I ask you how does the brain decide whether an emotion is ethically positive or negative? Which mechanism has been proven to decide this, if at all? If change is not necessary, why we do we see changes everywhere? If we do not have even the right or freedom to place new preferences into the minds of others, we can willingly live in a totalitarian state and imprison ourselves at home with computers, forgoing the role of education, the peer group, parents, and mentors. I can hardly acknowledge that with our level of human intelligence, we are static, changeless mammals moving around following the dictates of the all-superior brain machine. History was not changed with the machines of war (or with the mechanical machinations of the brain), but with the bloodshed of bodies and souls.

6 hours ago · Edited · Like

Micah Blumberg

Rimaa Vsbhatia Meta says:

"Micah, your assertion that a teacher is destructive by pushing change into the minds of students she cannot understand is, I feel, based on your assumption that the individual cannot be influenced into changing himself/herself, as the brain does the work itself."

Micah replies:

In reading your reply I realize you are arguing against a straw man, you are assuming that I am taking a position I am not taking. Perhaps you are familiar with the book called "the brain that changes itself" author Norman Doidge? I believe we must change, we are always changing, and each person is planning developing and growing their next actions, next thoughts and next reactions from the present and past actions, thoughts, and results of their own movements, the movements of others, and the causes of motion in the world. I believe there is no better guide to one's best next action than one's own self. Provided one is no longer a child.

Rimaa Vsbhatia Meta

says: "At the same time, you describe fear as a "good emotion," and may I ask you how does the brain decide whether an emotion is ethically positive or negative?"

Micah replies:

Our neurons collect data systematically, democratically, when the evidence is accumulating in a clear direction they surge forth with energy, this is how the brain chooses what is moral.

Rimaa Vsbhatia Meta says:

"Which mechanism has been proven to decide this, if at all?"

Micah replies: If you want to go deeper into this topic review the work of Michael Shadlen
<http://www.hhmi.org/scientists/michael-n-shadlen>

Rimaa Vsbhatia Meta says:

"If change is not necessary, why we do we see changes everywhere?"

Micah replies:

Change is inevitable. (that's why it's not necessary)

Rimaa Vsbhatia Meta says:

"If we do not have even the right or freedom to place new preferences into the minds of others, we can willingly live in a totalitarian state and imprison ourselves at home with computers, forging the role of education, the peer group, parents, and mentors."

Micah replies:

You invoke fears of a totalitarian state, and individual complacency as the driver you are moving away from. This kind of teaching is of Shiva nature.

Rimaa Vsbhatia Meta says:

"I can hardly acknowledge that with our level of human intelligence, we are static, changeless mammals moving around following the dictates of the all-superior brain machine."

Micah replies:

It doesn't matter what you can acknowledge or not really since both this idea and its most obvious alternative are stories from beginning to end. Two different perspectives, and no right perspectives.

Rimaa Vsbhatia Meta says:

"History was not changed with the machines of war (or with the mechanical machinations of the brain), but with the bloodshed of bodies and souls."

Micah replies:

Teacher is of Shiva nature, destroyer.

HHMI Investigator Michael N. Shadlen Scientist Bio | Howard Hughes Medical Institute (HHMI)
www.hhmi.org

Michael Shadlen investigates how the brain decides on one course of action rather than another.

3 hours ago · Edited · Like · Remove Preview

Rimaa Vsbhatia Meta

1. There is no empirical proof as of yet in neuroscience that the brain is capable of changing itself.

2. There is no empirical proof as of yet in neuroscience that the neurons of the brain use energy to make moral decisions--if there were evidence, we would be able to predict crimes Before they were committed.

3. By admitting that change is inevitable, you are contradicting your own assertion that change is not necessary, which you previously explicitly asserted. I asserted change is evident.

4. Kindly do not introduce religion into a predominantly scientific group by mentioning the name of Gods in arguments, as one cannot combine science with theology empirically--this is precisely why physics and philosophy have been isolated for so long, almost a century now. If you are that narrow-minded and conservative enough to feel a teacher is "destructive" to inculcate change in her/his students, you are equally capable of thinking that any kind of freedom is a threat to the passive individual who functions like a puppet in the hands of an omnipotent being.

5. Since you are incapable of presenting a sound argument, you dump the blame on others, by claiming they are writing "stories," whereas in reality, your own suffocatingly dogmatic beliefs are perfect examples of fanciful illusions which have no relation to logical scientific analysis. Agreed we have different perspectives, but yours is not by any means the right one, that is for the audience or participants to judge, not yourself.

6. In all wars, the destroyers were the men who created the war, not the innocent citizens who were sacrificed at its horrific altar, thus, as a pacifist, I am no "destroyer," but a supporter of human lives. And a repeated warning: kindly do not mention God's names here again, in allegorical comparison.

Conclusively, it would behoove you to acknowledge that a bad carpenter always blames his tools--like you have clearly done, on account of your having a very weak argument indeed, pure hypothesis, without any supporting empirical evidence at all. Your enclosure, by the way, uses the word ""investigates" and for all the assumptions you presumptuously make, this word needs of necessity to be replaced by "proves." Thanks.

3 hours ago · Edited · Like

Rimaa Vsbhatia Meta Micah, kindly have the courage to replace your deleted comments, the one above my last answer, as this is a group, not a NATO meeting. Thanks!

2 hours ago · Edited · Like

Micah Blumberg

Rimaa Vsbhatia Meta says:

"Micah, kindly have the courage to replace your deleted comments, the one above my last answer, as this is a group, not a NATO meeting. Thanks!"

Micah replies:

I never removed my comments. It only seemed that way because I temporarily blocked you and left the group. I was so offended by your reply. You have made several incorrect assumptions about my position, you've mis-characterized my statements, you've misunderstood somethings, you've made some irrelevant points, you don't know your place when you warn me not to use the names of deity, and you don't know your self. I'm was actually shocked by the viciousness of your rebuttal which feels like a character attack. It feels like trolling. However I'm not one to run away from an argument. I do like a difficult argument. I appreciate you for being so difficult, honestly, that's not sarcasm, it's genuine. So here I am, arguing again. Hopefully we can clear up some misconception huh?

Rimaa Vsbhatia Meta says:

"1. There is no empirical proof as of yet in neuroscience that the brain is capable of changing itself."

Micah replies:

I don't agree. There are over 40 years of studies under the umbrella topic of neuroplasticity, via EEG, fmri, implanted electrodes, and other brain scanning technology. Not to mention studies in psychology, neuropsychology, neuroscience, and cognitive science. My presumption is that perhaps you haven't taken your study very far in this direction. The brain is changing, and if it isn't changing itself then what do you think is changing it? I hope your answer is not a religious/spiritual answer, not after your (second to last) scathing comment.

Rimaa Vsbhatia Meta

says: "2. There is no empirical proof as of yet in neuroscience that the neurons of the brain use energy to make moral decisions--if there were evidence, we would be able to predict crimes Before they were committed."

Rimaa Vsbhatia Meta

says: "neurons of the brain use energy to make moral decisions"

Micah replies:

That isn't what I said, and it's more complicated than what I said. Please consider reading a book called: The Neural Basis of Free Will: Criterial Causation. Also having the evidence that proves how neurons make decisions does not automatically give us the ability to predict crimes before they are committed. You seem to rule out the element of chance. There are odds involved that prevent us from predicting the weather two weeks out, and there are odds involved that prevent us from predicting what people will choose. The scale of the odds is perhaps too great to overcome with any current technology/tool.

Rimaa Vsbhatia Meta

says: "3. By admitting that change is inevitable, you are contradicting your own assertion that change is not necessary, which you previously explicitly asserted. I asserted change is evident."

Micah replies:

This is like a word game, except with phrases, that teacher plays. Allow me to rephrase so you understand. I mean change isn't necessary to push on anyone, because change is inevitable anyways, it's the path of evolution.

Rimaa Vsbhatia Meta

says: "4. Kindly do not introduce religion into a predominantly scientific group"

Micah Blumberg

Micah replies: You introduced religion in the original post, in the picture, in the quote, look where it's referenced from. Okay so if you don't want to talk about religion, don't mention it in the first place.

Rimaa Vsbhatia Meta

says: "If you are that narrow-minded and conservative enough to feel a teacher is "destructive" to inculcate change in her/his students"

Micah replies:

Well the trivia is that I can be narrowly focused sometimes, but I'm also probably a lot more liberally minded from your future point of view, than you have presently estimated based on your experience communicating with me so far.

Rimaa Vsbhatia Meta

says: "you are equally capable of thinking that any kind of freedom is a threat to the passive individual who functions like a puppet in the hands of an omnipotent being."

Micah replies:

That's an absurdly mistaken characterization of my argument. Your projecting on me from your past experiences arguing with others because you have so little information about me and my position. Your rushing to judge because you don't have enough information yet to make any judgment. Your so demanding it's childlike, and you don't have enough patience to sift via conversation for elaborations and clarifications before you rush to judge, accuse, and offend.

Rimaa Vsbhatia Meta

says: "5. Since you are incapable of presenting a sound argument"

Micah replies:

God damn it that's so offensive. (That's why I love it.)

Rimaa Vsbhatia Meta says: "you dump the blame on others"

Micah replies:

I haven't blamed anything or anyone (yet). Thank you for sharing your delusion.

Rimaa Vsbhatia Meta says:

"you dump the blame on others by claiming they are writing stories"

Micah replies:

Wrong. We are all writing stories, that's not blaming, it's a fact. A sequence of neural expectations is a belief a sequence of beliefs is a story, have you read "On Intelligence by Jeff Hawkins", or perhaps "How to create a Mind by Ray Kurzweil"?

Rimaa Vsbhatia Meta says:

"whereas in reality, your own suffocatingly dogmatic beliefs are perfect examples of fanciful illusions"

Micah replies:

These are your delusional projections from your subconscious developed from your life experiences. Your trolling at this point. You realize that right?

Rimaa Vsbhatia Meta says:

"which have no relation to logical scientific analysis."

Micah replies:

Sigh, God, your mean, really, sooooo mean. lol

Rimaa Vsbhatia Meta says:

"Agreed we have different perspectives, but yours is not by any means the right one, that is for the audience or participants to judge, not yourself."

Micah replies:

Whatever your agreeing to it has nothing to do with what I said.

Rimaa Vsbhatia Meta says:

"6. In all wars, the destroyers were the men who created the war, not the innocent citizens who were sacrificed at its horrific altar, thus, as a pacifist, I am no "destroyer," but a supporter of human lives. And a repeated warning:"

Micah replies:

Why is a pacifist giving me a warning? Oh because you have disowned part of your self. Know thyself. There is much violence in words and ideas.

Rimaa Vsbhatia Meta says:

"kindly do not mention God's names here again, in allegorical comparison."

Micah replies:

I do have a few more things to say about the destroyer nature. We all have it. We are all Shiva. If you deny that you are "destroyer" then you deny the truth, because we are all that. There is disowned "destroyer" and that's when people deny it, and because they deny it's disowned,

unconscious, and immature. When you own that you are "destroyer" then it becomes conscious, and mature. Stop denying it and accept that teacher has destroyer nature. It's not your place to tell me what to say or do. Teacher is destroyer. She needs to know that because it's disowned.

Rimaa Vsbhatia Meta says:

"Conclusively, it would behoove you to acknowledge that a bad carpenter always blames his tools--like you have clearly done"

Micah replies:

Thanks for sharing your delusion. We are all delusional. The nature of thought, movement, and words is all delusional. Every message has holes, every impulse is wrong from at least one perspective. I haven't blamed anything, nothing. That's your thinking project onto the external that you have disowned, so you hate it in others, because you think that blaming is a socially unacceptable behavior that makes you unworthy of love and acceptance. What you need to do is accept it in yourself, forgive it, forgive yourself for blaming external things, and then realize you are still worthy of love and acceptance.

Rimaa Vsbhatia Meta says:

"on account of your having a very weak argument indeed, pure hypothesis, without any supporting empirical evidence at all.

Your enclosure, by the way, uses the word "investigates" and for all the assumptions you presumptuously make, this word needs of necessity to be replaced by "proves." Thanks."

Micah replies:

It's not my job to do all your research for you, I don't provide empirical proof every time I make a statement. Why don't you google scholar some of what I said so you can read a lot of things before you just ignorantly claim that there is no evidence and no empirical data to support anything I have said. You haven't found it so your just assuming it doesn't exist, but your not even old enough to have investigated everything and you never will be, there's too much information. All I gave you was a lead, so you can investigate for yourself, if you want to find out more. I haven't done your research for you because that's your job not mine. Don't blame me for it.

a0457z

(cortex, neuron) so neural columns are multi-modal
vision neurons

its too simple?

the visual cortex closest to the frontal lobes is going to be the most multimodal

visual cortex is involved in multimodal processing that is connected

the visual cortex, closest the eyes is going to be the most visual, and least multimodal

because the makeup of the proportionality of the modalities of any neuron is going to be based on the signals that are closest to that neural column.

the human brain is like 3D chess

any square on any level is a neuronal column, and activity is coming from every direction, up down, left, right, forward, back, diagonal horizontal, diagonal vertical, diagonal horizontal and vertical

3D Chess

the idea is that vision is involved in so much of our brain activity that the visual cortex is far more multimodal than has been theorized in the past

so imagine there is a gradient from one end of the visual cortex to the other, the closer to the eyes the more that cortical column is all visual information, the farthest from the eyes the more that part of visual cortex, that cortical column is involved in multi modal processing to the degree that its location

a mouse's brain is mostly

a0459z

Jul 26, 2021

(fourier)

What I am reading

Raspberry Pi Pico Turret Calculates the Perfect Shot

By Ash Hill

https://www.tomshardware.com/cdn.ampproject.org/v/s/www.tomshardware.com/amp/news/raspberry-pi-pico-turret?amp_gsa=1&_js_v=a6&usqp=mq331AQIKAGwASCAAgM%3D#amp_tf=From%20%251%24s&aoh=16273327498528&csi=0&referrer=https%3A%2F%2Fwww.google.com&share=https%3A%2F%2Fwww.tomshardware.com%2Fnews%2Fraspberry-pi-pico-turret

fourier transform harvard

<https://scholar.harvard.edu/files/schwartz/files/lecture8-fouriertransforms.pdf>

////////////////////////////////////

<https://medium.com/silicon-valley-global-news/death-star-robot-anonymous-global-warfare-resistance-is-futile-6d2732b467a8>

Death Star Robot: Anonymous Global Warfare. Resistance is futile.

The inevitable & unstoppable future of killer autonomous sentient micro drones, and how to build them, by Micah Blumberg, host of the NerveGear Show at <http://vrma.io>

Recently this video of killer autonomous drones showed up on the internet. It's titled "Slaughterbots" and the goal was to scare common folk into lobbying their local governments to ban these super weapons, but legislative efforts will be powerless to stop this future from coming. This video below highlights the inevitable unstoppable future of killer autonomous drones, enabling global warfare.

The reality is that both governments and the super rich are able to operate outside the laws with secret facilities, black sites, and locations outside the laws of a given country.

Another reality is that the biggest governments in the world are making massive investments in Artificial Intelligence and Weaponized Drones already. So any laws that are passed will serve to slow down people who are not rich from acquiring this class of super weapon.

The United States has already shown off a preview of this kind of weapon, and it is expected that China, Russia, and every other high tech military service on this planet is developing this capability. The sad truth is that if you are not developing your own technological singularity your country could fall to a technological singularity controlled by another country.

The Pentagon's new drone swarm heralds a future of autonomous war machines
On Oct. 26, 2016, a pair of Hornets flying above an empty part of California opened their bellies and released a...
www.popsci.com

So how do we build them? Well first battery life for drones needs to get dramatically better. Today small drones like quadcopters have very short battery life. So one scenario is that you might have a larger long range drone with bigger batteries and solar cells to recharge drop a bunch of these super small drones with shorter battery life very near their target. Second the technology needed to do spatial recognition and facial recognition and flight maneuvering for an entire swarm needs to get a lot better, a lot faster, and the hardware needed to power it needs to get a lot smaller, with fewer energy demands. Right now devices like the Hololens that do spatial recognition are too large for drones, and the more accurate they get the hotter they get, the worse battery life gets. We probably need new chipsets and new advances in software before these kinds of killer flying bot swarms can become a real problem. Frankly it's not a matter of if but when. Advances in technology will happen and soon or later technology this advanced will be available to purchase.

Maybe legislators will figure out how to correctly classify and ban super drone super weapons, but that won't matter because the reality is that anyone in Silicon Valley who is rich enough has a moral and ethical duty to themselves to develop their own technological singularity in secret,

even illegally, as a personal defense against a potential enemy building their own technological singularity.

In this episode of Death Star Robot which is in two parts, I talk about how the human mind might be structured and how we could potentially build that into a robot like a drone. In the first part Laura Lou the VR Girl helps me introduce the talk that I had with Matt Hoe who co-founded Virtual Bytes

Part 1 of 2

<https://www.faceobok.com/worksalt/videos/1986003971426240/>

<https://www.faceobok.com/worksalt/videos/1985980348095269/>

a0462z

(criteria, causation, neuron)

How organisms make choices is something I study. If you think of the last major choice that you made, what is the reason you made that choice? The reason is a data packet, of patterns, patterns that are in natural tempo-spatial, with varying dimensions over time that are recognized by networks of neurons in the brain, each neuron is recognizing a portion of that pattern by detecting coincidences. Cells that detect coincidence patterns fire and when cells fire they either inhibit or excite neighboring cells which could result in muscle movement or in the cessation of muscle movement. So in short the patterns that our minds detect, literally, cause us to move, or to put it another way reasons cause choices, or criteria causes action. This theory is called criteria causation, and while organisms make selections or choice, that choice is not exactly free, it comes down to individual cells detecting coincidence patterns so that your brain is pushed by information, pushed by reasons, to choose one type of action or another.

<https://mitpress.mit.edu/books/neural-basis-free-will>

a0464z

Aug 15, 2012

This could be a duplicate

(perception, cortex)

Thought of the day: if Einstein said that space creates time, and we are space within space then we create time in time?

Brian Bauereis

Do you think that the space we take up within the space that Einstein is describing, are any different? Your thought reminds me of an incredibly interesting fact: our brains are actually able to slow down time during moments when we need the most time available! Individuals perception of slowing down of time, in moments of crisis, is not a perception at all. Maybe your thought of the day just became more interesting. I invite you to look up this wonderful and mind blowing fact. :-)

Micah Blumberg

Spacetime is one thing, space doesn't create time, it is time, time is the fourth dimension of space.

Humans are not separate from spacetime. lol I am spacetime

Andreea Hempure

Micah space-time are interdependent therefore one creates the possibility for the other to happen!

@brian, I'll have a thought about that when I finish work tonight.

Micah Blumberg

If you watch starting at the 44 minute mark he talks about a new theory of how the brain does time. There is no clock inside, different regions of the neocortex experience time at faster or slower rates. The lower regions like V1 will experience time very fast while higher regions will experience time much more slowly.

http://www.youtube.com/watch?v=48r-leYOvG4&feature=youtube_gdata_player

Jeff Hawkins - Hierarchical Temporal Memory

www.youtube.com

How a Theory of the Neocortex May Lead to Truly Intelligent Machines Jeff Hawkin...

it's really "spacetime", meaning its not two things :)

it seems like if adrenaline shifted your conscious peak brainwave activity into the lower regions your sense of time would slow down

fyi My Grandfather led the team that created gps and put the first gps satellite in space

http://en.wikipedia.org/wiki/Bernard_P._Randolph from him I learned that time on a satellite moves at a different (slower) rate than it does on earths surface where the curvature of space (related to the density of mass) is greater. It seems unlikely that a human brain is going to slow spacetime without reducing the entire planets density of mass. Gravity and Time are the same thing you see.

Bernard P. Randolph - Wikipedia, the free encyclopedia

Bernard Peter Randolph (born July 10, 1933)[1] is a retired United States Air Fo...

Micah Blumberg oh and this

"Time doesn't actually slow down in a crisis | Not Exactly Rocket Science | Discover Magazine"

<http://blogs.discovermagazine.com/notrocketscience/2010/05/03/time-doesn't-actually-slow-down-in-a-crisis/>

a0465z

Feb 26, 2014

(thalamus, cortex)

Micah Blumberg

I think it's not spiritual, it's physical. So lets say you could separate all the cells in the brain, and with advanced machines keep them all alive, each cell would only be a cell, no person could

exist, then at some point when you start gradually reconnecting the cells together, the activity of one group of cells spikes activity in another group of cells, which in turn spikes activity in a third group of cells. The first group of cells might be set up to recognize pieces, lines, edges, even colors and within that cluster identify bigger patterns from those edges, letters, words, hands, flowers, as they fire as a bundle they trigger another group of cells which is all about coordinating the hands, all the feelings of a hand, it's relative location, what it's doing, and another group which is about feet, then it goes through a hundred other clusters, and a pattern of thought emerges, pieces of an image become a flower, which physically inspire hands and feet, which creates some movement, and now the image of a word, a voice region pronounces the word, a vision reason creates a visual from the word, the word is self, this cycles activity back around to the flower, the feet, and hands, and it is these cycles of activity that begin to stitch together some higher thought patterns, unifying multi-sensory concepts, that exist because of cycles in the mind. These unifying multi-sensory concepts literally drive their own development, like new born chickens breaking out of an egg, because these patterns send massive torrents of feedback to lower levels cells, coordinating them, to support, to align and look for the unifying concept. So people look for more of themselves with their senses in the external world when self concept is driving the mind. I think this is why the self concept of ego isn't the real self, it's an illusion that creates more illusion. Even trying to not think about the self, or trying to have no self, is more of the same. Some people have a medicine, and they try to say the self is everything and nothing. Instead of seeking, they are just knowing it's always everywhere and nowhere. So there is no reason to seek it in the external.

Gvido Ólafur Eiríksson

seems like a relatively complex way of saying what you are looking for is the one who is looking

Sævar Poetrix

Guys, spirituality hefur nákvæmlega sama vægi og fótboltaleikur. Ekkert er slæmt. Við deyjum öll.

Þú getur gert það sem þú vilt en það er engin holy truth. Allt er truth.

18 minutes ago · Like

Micah Blumberg

What you said is extremely clever and insightful Gvido, but honestly I was trying to say that there are only these physical pieces, it's like the cells are cogs in a clock, and the mind is a time keeping machine. Self is a broken concept, it can't be fixed or found, it's meant to break.

Gvido Ólafur Eiríksson

how do you explain out of body experiences?

Micah Blumberg

well I don't try to explain everything for everyone, but in my mind they are dreams, like any other kind of dream or hallucination

Gvido Ólafur Eiríksson

but they also happen while the body is clinically dead.
many have had their bodies revived and after that reported, that while their bodies were dead, they were seeing, from an extrabodily perspective, e.g., the medical staff around the body.

Micah Blumberg

brain activity does not simply stop when a person flatlines

Gvido Ólafur Eiríksson

i think that some of the "dreams" people have reported are things that have been confirmed as correct by those who were awake while the person was dead—i.e. the person saw things without the bodily sight which were not mere hallucinations but real events. so it seems there is consciousness outside of the body. i think the scientific community of the future will confirm this. confirm nonlocal consciousness.

Micah Blumberg

have you ever taken a class in computational neuroscience? or read a book on artificial neural networks? I ask because what we see is how the eye puts together an image from the retina, to the ganglion cells, eventually to the thalamus, and the visual cortex starting in v1 of the occipital lobes. What we think we see is that an image is made up of temporal frequencies representing lines and edges on some level, and coherent combinations of lines and edges at a higher level, so that from lines and edges a corner could be made, or movement detected, or color, or a letter, and from even higher up a word, or a rose, or some other visual pattern might emerge. It's because of the mechanical operations of all these pieces that an image is manufactured. because we can deduce this from current research it just seems a lot more likely that people are having highly detailed excellent dreams when they claim an Out of body experience. At least in my mind that seems more likely.

a0467z

(perception, vector, neuron)

Micah Blumberg it means your self is an on the fly calculation and thus there is nothing to upload

20 hours ago · Like

Micah Blumberg look the neurons are like switches, adapting to any task, did you read the part about selection vectors and line attractors? It doesn't make sense to you after that? Here is a quote

"If question was about motion, the selection vector directed motion information to the line attractor, and the artificial neurons chose left or right."

see the neurons are just adapting themselves, lending themselves to any kind of calculation, they don't have identities, they take on representations, wearing representations, being the color, being the left or right motion, being the line attractor, or the selection vector

being you is just another line attractor, who you are in this decision right now is up to some selection vector, it's like a universal computer, able to calculate anything dynamically by being free of a static identity

I guess this can really be hard to accept if you have other reasons for why you need to have a self, why you need to be uploaded, fear perhaps? IF it's fear keeping you from accepting the idea that you have no actual self that isn't an on the fly calculation, then just don't be afraid. It's okay to not really exist.

14 hours ago · Edited · Like

Micah Blumberg The color and the motion are both tempo-spatial metaphors, as you would be. As for being an on the fly calculation, if you have any perception of self, that perception may be influenced by temporary factors such as, where you are, who you are with, and what you are doing. You can think of self as a direction, you can also think of self as imaginary, you can become identified with a character in a story, in a videogame, in a virtual world, there are even science experiments where you can be tricked to thinking you are standing behind yourself, or that your arm is not your arm. Scientists have trained monkey's to control virtual arms with their monkey thoughts. It is possible that someday you could be in a virtual world, identifying in the body of something alien, experiencing it so powerful that for a while it becomes you, and you forget about humanity.

a0468z

Jan 11, 2015

(Cereb, Cortex, qualia, neuron)

Micah Blumberg "Otherwise, consciousness would rather manifest itself preferentially in the cerebellum than in the cortex because the first has a bigger number of neurons. However, this is not the case."

actually there might be more consciousness in the cerebellum, nobody has proved that this is not the case.

2 hrs · Edited · Like

Matt Way What the hell do you mean by "more consciousness"? The circuitry and function of the cerebellum is quite well understood. Well enough to be trialling cerebellar prosthetic devices.

2 hrs · Like

Micah Blumberg it might supply a whole lot of conscious feeling that just goes missing when you don't have a cerebellum

2 hrs · Like

Matt Way What does "supply conscious feeling" mean? Why do people think consciousness is something that the brain pushes around? Makes no sense.

2 hrs · Like

Micah Blumberg conscious feeling is conscious feeling, it's a sense of feeling, this is a concept you have to use your intuition to understand

1 hr · Like

Micah Blumberg instead of the phrase conscious feeling we could try to say a self-referential modality network focused on predicting body sensations and body movements

1 hr · Edited · Like

Micah Blumberg someone without a cerebellum may have less self conscious awareness of their own body, which might explain why they walk in a way that looks like a person who is wasted drunk, the short way of saying that is "less conscious feeling"

1 hr · Like

Matt Way "conscious feeling is conscious feeling, it's a sense of feeling, this is a concept you have to use your intuition to understand"

Why don't you just say you have no idea what you are talking about. I also recommend you trust science and data over intuition when it comes to this stuff. Intuition has a very bad track record (flat earth, geocentrism, vitalism, etc).

1 hr · Like

Micah Blumberg As I explained in my subsequent comments I do know what I am talking about:

"instead of the phrase conscious feeling we could try to say a self-referential modality network focused on predicting body sensations and body movements"

"someone without a cerebellum may have less self conscious awareness of their own body, which might explain why they walk in a way that looks like a person who is wasted drunk, the short way of saying that is "less conscious feeling" "

thanks.

1 hr · Edited · Like

Micah Blumberg The idea is that neurons both individually, and collectively in a circuit can detect patterns that have temporal and spatial dimensions, and make decisions based on those patterns both individually and collectively, the cerebellum may detect physical sensations related to how the body feels and moves, which could explain why people who have lost or damaged cerebellums have more difficulty with movement and feeling. It is actually a reasonable idea to wonder if the cerebellum actually has more conscious feeling in it than the rest of the brain. It certainly is possible. I would not rule it out prematurely.

1 hr · Like

Micah Blumberg Intuition is valid computationally see Artificial Intuition
<http://artificial-intuition.com/>

I read your blog Matt Way

"It is my belief that consciousness is not special; Not an extra substance, force, or epiphenomenon, but rather a process of computation no different to that running on the machine you are reading this on. To be more philosophically precise, I believe human beings are p-zombies. That at the heart of this discussion lies a mistaken intuition, coupled with a misplaced evolutionary desire for self importance. This article is by no means a proof, however I wish to emphasise that the onus now is completely on the qualia proponents to prove qualia exist, no matter how strong or globally shared this intuition is"

<http://www.compressionaddict.com/.../building-conscious...>

I'm not talking about some consciousness as some special mystical sauce. Just like I'm not talking about intuition as something that isn't computational.

I think neurons detect coincidence patterns, and make directional inferences to build spatial and temporal representations within neural circuits including within the cerebellum.

When I speak of conscious feeling, I'm not talking about mystical sauce, I'm talking about machine learned patterns shared over a network of signal detectors and signal transmitters.

Artificial Intuition

AI, Artificial Intelligence, Computational Intelligence, Artificial Intuition, Epistemology, Philosophy, Bizarre Systems, Bizarre Domains, Chaos Theory, Complexity

ARTIFICIAL-INTUITION.COM|BY MONICA ANDERSON

2 mins · Like · Remove Preview

a0469z

the amplitude of space is the inverse of frequency

because the rate of transformation is only faster relative

oscillator of cells

every cell eventually feel the char dissipation if its local and decaying slow enough

brainwave entrainment research

<https://twitter.com/brainbridger/status/1467109811162656768?s=21>

a0470z

Apr 16, 2014

NeoMindCycle Research Team is about sharing news, ideas, documents, and software, including articles related to the fields of neuroscience, both biology and neural computation, as well as artificial intelligence and computer programming. It's a group for learners and enthusiasts, for makers and programmers.

It's a place for sharing & discussing everything from dendritic computation, multicellular metabolism, glia communication networks, computational neuroscience, neuromorphic & neurosynaptic chips, neurotechnology, brain computer interfaces, neurofeedback, fmri, cranial electrotherapy stimulation, transcranial direct current stimulation, and transcranial magnetic stimulation, 3d brain visualization, neuroplasticity, neurophysics, nootropics, brainwave entrainment with light and or sound, and related topics.

a0472z

Note from Aug 17, 2012

(dendrite, synap, neuron)

Micah Blumberg

I don't think you are you now Richard, what makes you think that you are more than a mechanical simulation of a person even now?

Wednesday at 4:54pm · Like

Micah Blumberg

<http://ieet.org/index.php/IEET/more/hopkins201208141> who says you are you? there are memories, and connections in your mind, thats a short summary of it, none of this brain system is really you anyways.

Uploading Won't Help You

ieet.org

If there is a Holy Grail in the technological search for longevity and immortali...

See More

Wednesday at 4:58pm · Like ·

Micah Blumberg

your brains activity is a reaction, the connections and memories become the predictions of new causes, and the structure that influences the development of new concepts, it barely works but it effectively simulates a functional person, with massive redundancy, and efficiency, technology by nature that is slightly more advanced than anything humans have built yet. but there isn't any real you, unless you are concepts consisting of connections between cellular memories, I don't think I'm that, I don't think I actually exist at all. Whats your spin on it?

Wednesday at 4:58pm · Like

Micah Blumberg

what isn't artificial about intelligence now, the brain is a machine now, I don't exist in that, I'm not in my brain. I'm not a memory, or a branching network of connections between memories, but perhaps consciousness is nothing else except a result of that system of chemicals, and electricity and folded dna protein based brains? perhaps its a product, like a computer, and one day brains will be sold in a 99 cent store, little computer brains that have real consciousness, in a machine, Real not artificial consciousness.

Wednesday at 4:59pm · Like

Micah Blumberg

you have a bunch of parts working together creating the illusion of a whole, identity is that illusion http://www.huffingtonpost.com/ben-thomas/schizophrenic-brains_b_1762933.html

Gods, Selves, and Schizophrenic Brains

www.huffingtonpost.com

Whether a person's "identities" can be dissociated or not, it's clear from Hans'...

See More

Wednesday at 5:01pm · Like ·

Richard Pomfret

That's a bit reductionist Micah, as 'me' I am more than just the sum of my neuron connections or connectome - I would at least add a few of my key organs and my entire nervous system into the mix. I 'feel', therefore I am. ;)

Yesterday at 4:42am · Unlike · 1

Micah Blumberg

you can add the whole ecosystem that your apart of to the list. How can you live without air, without food, you have a certain amount of learned dependency on your social contract, not that it can't be unlearned, it would be more difficult to survive if you were the last person on earth, let alone reproduce, so lets just say the sum of you is more than your body. Why not add the entire cosmos, your not separate from spacetime, your made of the same stuff that's made in stars, particles, atoms, you are spacetime, you are the conscious peak of the cosmos, the galaxy is your robe, the sun is the cool chain you wear on your cosmic neck.

2 hours ago · Like · 1

Micah Blumberg

You can say that your everything, and because everything is an all inclusive term, you'd be right.

2 hours ago · Like

Micah Blumberg

But if you stab a rock, it's not the same feeling as when you prick your finger. So in a sense your finger is more you than a rock. Yet you could lose a limb, and get an artificial replacement, and your plastic brain, with the right neuro-plastic treatment, can remap itself, to treat the artificial limb as if it were it's real limb. The brain is not completely dependent on the body, you could conceivably create an artificial body, the perfect artificial ecosystem for the brain, and the brain would adapt to, to control it, to become that new body, your new mechanical self. The components of the brain itself, the cells, the proteins, the particulars, the myelinated axons, the glial cell waste removal system, the microtubules, the camkii2, the branches of dendrites and synapses, serve as hardware for memory and concept formation, predictions of causes, derived from sequences of patterns, from chains of data, that comes in from the senses, and the brain itself, in any particular part, is just a system of cells, a cooperation of rivals, working together to feed, it's a hungry glucose and nutrient driven system, the hungriest organ in the body, but the

result, is the coordination of a body, including your fingers, and your voice muscles, for communication, the same way your brain relates to itself, it relates to everyone else.
about an hour ago · Like · 1

Micah Blumberg

So if a rock isn't really me, and if I can lose a finger the finger isn't really me, and I can take any particular cell in my brain out, because my braincells are not really me, then what I am is some emergent property, a macroscopic form that doesn't exist in the detail, a higher level idea, a ghost, and a ghost that doesn't really exist at the microscopic level. My existence is in heaven, in a cloud, in a dream, and it's so not real :)
about an hour ago · Like · 1

Richard Pomfret

Yet it's as real as real can be. I like your approach Micah. A monist approach to how we see the world throws up some interesting questions - that the concept of self and the individual, of 'me' or 'you' is an illusion. The existence of mirror neurons appears to back this up somewhat. Being self-aware and conscious is perhaps an absurdity, but it's an evolved one. We can either laugh or cry at knowing this - always better to laugh. :)
13 minutes ago · Like

Micah Blumberg

"that the concept of self and the individual, of 'me' or 'you' is an illusion." not exactly an illusion. imagine that individual neurons have memories, and then imagine that a concept is the connection pathway between several of these cell memories, the concept isn't in the memory, it's in the connections between memories. So there are memories of your toes, your knees, your body, your hair, your face, your smile, your girlfriends, your guardians/parents, your loved ones, and then the concept of you is the neural connection between all those memories. It's not exactly an illusion, because the concept of you isn't the whole of you, it might be less than 1 percent of you, but you know absolutely nothing outside the 1 percent that is your concept.
8 minutes ago · Like

Micah Blumberg

what I know about myself, is a concept that is a connection between associated memories, what I know about the world, isn't in the world, it's a concept memory model predicting the causes of motion across all senses in my mind, it's less than what's real, less than 20% of what's really out there, and maybe less than .00001 percent of what's actually real. it's not correct, it's not realistic, it barely works, and thinking that you are "as real as read can be" is only correct in the sense that any tautology is correct, but it leaves out the more likely story that "what we see is not completely real, because our brains are only modeling between .00001 percent and 20 percent of what's really out there."
about a minute ago · Edited · Like

Richard Pomfret

Agreed. So if we can replicate these connections between memories in a person then we would have another 'me' or 'you' - the only problem then, is replicating just about everything else (including as you say, the relationships with others and with the environment around you). Love it when neuroscience helps shine a light on philosophy.
about a minute ago · Like

Micah Blumberg
your concept of you, might already be replicated in millions of other people, you might be a collective entity and have not yet realized it
a few seconds ago · Like

Micah Blumberg
the moment the "I am" concept map of connections, and memories, is modeled and turned into a shelf product that any kid can buy and add to any robot, effectively making that robot a "Richard Pomfret" bot, what will you think of your consciousness then?

a0473z ctp
(cortex, vector, neuron)

Choices in Neural Networks

"Researchers Discover How Neural Circuits Zero in on the Specific Information Needed For Decisions"
<http://neurosciencenews.com/neuroscience-decision-making-prefrontal-cortex-577/>

Micah Blumberg it means your self is an on the fly calculation and thus there is nothing to upload
6 hours ago · Like

Chris Hennick How does that follow from a study like this? And why not upload whatever function *generates* what you call my "selves", so that it can digitally generate more future selves for me?
19 minutes ago via mobile · Like

Micah Blumberg look the neurons are like switches, adapting to any task, did you read the part about selection vectors and line attractors? It doesn't make sense to you after that? Here is a quote

"If question was about motion, the selection vector directed motion information to the line attractor, and the artificial neurons chose left or right."

see the neurons are just adapting themselves, lending themselves to any kind of calculation, they don't have identities, they take on representations, wearing representations, being the color, being the left or right motion, being the line attractor, or the selection vector

being you is just another line attractor, who you are in this decision right now is up to some selection vector, it's like a universal computer, able to calculate anything dynamically by being free of a static identity

I guess this can really be hard to accept if you have other reasons for why you need to have a self, why you need to be uploaded, fear perhaps?

a0476z ctp

Created Apr 14, 2018, 10:27 PM

(cortex, neuron)

Micah Blumberg

I disagree with the notion that this would ever cause body image issues, which to me sounds similar to the wrong headed idea that violent videogames will cause a rise in violence when the opposite has happened. This app may reverse body image issues and provide folks with relief from dysmorphia

Shashkes Sarit

A lot more research is needed but the general notion is that almost any "medication" can be harmful if not used correctly, inducing plasticity in the brain is a strong thing. I think that if we don't give females or full bodied persons the option to represent themselves in a environment in VR we are at best increasing social stigma and at worse creating a platform for eating disorders and dysmorphia.

Micah Blumberg

Your point sounds similar to the idea that certain fashion magazines can cause an eating disorder because they showcase only an idealized version of a feminine body and not a real body. You could be right.

Micah Blumberg

My counter argument point is a different point, I am not arguing against that kind of point but instead arguing that if the structure of our minds is like HTM Hierarchical Temporal Memory outlined in Jeff Hawkins On Intelligence book then we are fundamentally dividing all sensory representations of the world into hierarchically sorted categories which makes intelligent systems like humans uniquely and inherently good at making distinctions, such that overall humanity is not going to be confused by or mentally disturbed by VR avatars or by video game violence for the same exact reasons. Intelligence is good at making distinctions, inherently, so I'm not afraid that facebook Spaces will cause dysmorphia

Shashkes Sarit

Micah Blumberg this is a misunderstanding of this theory best example is rubber hand illusion. When two signals statistically match your brain creates a model that the rubber hand is yours. Same with VR avatars and very different in computer games that don't have this statistical match between sight and proprioception.

Micah Blumberg

The rubber hand theory suggests that you can temporarily fool the brain into thinking that the rubber hand is your real hand. It does not suggest that having been tricked by the rubber hand delusion will cause hand dysmorphia in either the short term or the long term.

Shashkes Sarit

like i said more research is needed but the fact that it is easy to trick the brain should be taken into consideration... if you are looking for long terms effect of these type of "tricks" mirror box therapy and research regarding treatment of anorexia using vr avatars is out there... and like i said what ever can cure can likely do damage if used in an inappropriate way.

Micah Blumberg

I remember this story, similar to the rubber hand effect, that was highlighted by a guy named V.S. Ramachandran, about how creating a box with a mirror, to make the participant think that their left hand was their missing right hand that had been restored, caused relief from phantom pain, when they were able to pretend move their right hand, by moving their left hand, and seeing it in the mirror. To me this suggests that illusions that fool your brain can have therapeutic benefit, cause pain relief, and perhaps other neurological benefits. I also think about how some users of psilocybin, a form of medicine that can trigger hallucinations, can cause depression relief. Both topics to me suggest that tricking your mind, whether with mirrors, rubber limbs, virtual reality, or with medicine may have a therapeutic benefit, and that until we have further research we might be optimistic about the possibility that avatars in Facebook Spaces may in fact relieve body dysmorphia and possibly pain and depression around the self image concept.

Neurologist V.S. Ramachandran on the Mirror Neuron Effect

https://www.youtube.com/watch?v=s_SDvafWRiU

Shashkes Sarit

Micah Blumberg the difference between banana avatar and an avatar that is very similar but only different in one thing is rooted in the hierarchical context dependent way your brain creates models watch our next show on monday i will try to explain more

Micah Blumberg

Sure, the hierarchical context may indicate that the content under discussion may be in two very different spatial locations the brain's neo-cortex, <http://gallantlab.org/index.php/publications/> I would guess that you might propose that the location of a concept in the brain's tempo-spatial hierarchy is related to its emotional weight within the mind of that person, an idea that could be true for some people and not true for other people.

Micah Blumberg

I would think that the emotional weight that someone attaches any concept, including the concept of self, is going to change overtime, and perhaps change based upon factors like the individual's cultural metaphor, the spatial metaphor of self understanding which may change, grow, shrink, or otherwise become altered in its properties over time. So that emotional weight for the self concept, or for any other concept, would vary drastically for that same person measured at two different times in their life, that could mean measurements comparing when they are a teenager to when they are an adult, or measurements between the morning and the afternoon, or measurements before and after a meal. The degree to which an illusion can affect the self may vary wildly depending on the conditions that are true in that person's life, or their stomach, their age, or even the time of day.

a0477z

Created Oct 11, 2012

(category, theory, vector semantic)

Regarding Artificial Intuition by Monica Anderson, and Grok by Numenta: Is a semantic token the meaning of a word?

Is a semantic token a map of vectors between points above a certain threshold in various nodes?

Is a semantic token like a matrix, that can be understood as a spatial metaphor, or a description in category theory that defines or remembers a relationship between vectors that emerge in space?

Is model free intelligence about creating a model based on whatever emerges beyond the thresholds that filter significant patterns from noise?

I'm getting a new sense of the inner geometry of my mind.
and the geometry of my thoughts

See this video <http://medicalxpress.com/news/2012-10-fetal-neural-vision.html> this does not look like single character bits fed one at a time triggering points converted into vector mapped based memories. it looks like a morphing vector pattern being going through several stages of memory reduction in the architecture. Essentially because the burst runs out of steam, and then it leaves its vector mapped imprint. A spatial representation imprinted in the fired connections.

I hope replies reflect the subject of this group: Categories & Geometry of the Mind. Do you think meaning for intelligent beings may imply an unconscious topographical map of nodes that are themselves semantic tokens reflecting maps between points of above threshold data associations in a multi level pattern learning machine?

Burst of fetal neural activity necessary for vision

medicalxpress.com

(Medical Xpress)—A sudden and mysterious burst of activity originating in the retina of a developing fetus spurs brain connections that are essential to development of finely-tuned sight, Yale researchers report in the journal Nature. Interference with this spontaneous wave of activity could play

Like · · Unfollow Post · Share · about an hour ago

Seen by 8

Micah Blumberg Just imagine that when you see something, this is happening in your brain. Imagine that your having waves of sight pass through your brain tissue. Flowing in almost like water with special properties

It's not like feeding binary bits into a learning machine one at a time, it's like pouring in a data stream, words, pictures, bits, all jumbled together, and letting the structure sort it all out.

56 minutes ago · Like

Micah Blumberg The question I would have for Monica, and or Jeff Hawkins, would be, can you visualize the activity in your computer based connectome with graphics so that the activity looks like this. Would the activity look like this at all? Perhaps your visualized connectome would not have brainwaves?

47 minutes ago · Like

Micah Blumberg Do your semantic tokens (vector maps of associations) really come from emergent patterns that are imprints in the memory created by synthesized brainwaves?

46 minutes ago · Like

Micah Blumberg I like how in AN model, intuition is the emergent result from points plotted in a vector tree map that you can describe in category theory (the vector tree map not the emergent patterns). I think she describes it in C and or Java, but I think C and Java lack the fluidity that could happen in a functional language like Haskell. Where node memories can create vector memories and The model free nature means that the concept is the memory of the tree's reaction in a sense. With Haskell and an 80 core processor one could have each node in the tree creating emergent vector maps with the other activated nodes independent of a centralized process.

I like how in AN Model, the "concept" isn't pre-thought and pre-programmed, it's learned or built by the vector tree's memory system in response to the stream of data.

Also in Haskell you could have the eighty core processor calculate each section of a massive category theory defined mind map representing a neocortical column completely out of order and still return the right result.

a0478z

Jan 7, 2013

""It isn't ever entirely a dream world, nor another reality apart from this"

It is one thing to be in the dream and totally unconscious that you are in a dream, and it is another thing to be involved in the dream and yet wakeful about it."

I'm not dream at all, I'm awake to the nature of thought and awareness being delusion. In the eastern mysticism many think they can separate thought from the visual awareness, and in Tibetan's when they meditate the occipital lobes (visual cortex) is far more active than in the Western meditators. Because the Tibetan's do not consider visual thoughts to be thoughts, they think it's instead awareness.

So both visual awareness, and thinking are the same thing, this I know from very recent research into the human brain. The eastern mystics have always been partially awake in the dream to think their thoughts and awareness were two different things.

So it is another thing entirely to be awake to that reality that all your thoughts, and all your awareness, is by it's very nature delusion, no matter how accurate and precise awareness seems, it's still delusion. Such is it's nature.

a0480z

Oct 20, 2013

(hebb, direction)

I think self is a direction, and that self does not exist, except as a direction, a direction that points to the strange loop of hebbian learning brainwave activity in that direction.

When it comes to self there is really nothing to be obsessed about, it's just a direction.

Maybe his mind is obsessed with projecting self obsession on others? Maybe he thinks his imagined ego actually exists?

a0481z

(synap, dendrite, vector)

the matrix is the arrow or morphism between points or objects which are vectors

The matrix represents associations in the brain, like a synapse-dendrite association, in Gothendeick topology the matrix is the arrow or morphism between objects (points, sets, names) which are the vectors inside these matrices.

a0482z

note created Aug 19, 2012

(Observer, synap, neuron)

(notes on this note: It seems poetic, perhaps there is something in this to inspire ART for the second edition of the book.)

Is observation an action by an actor whose name is the observer?

For a thought experiment you assume a singular observer, in each person, but suppose this observation is actually expectation.

You have an experience, then you expect another, you've had so many experiences that maybe you're not really sure what to expect next. So instead of saying it's a specific expectation, you go with a more general term, and you say it's observation.

Observation is your neurology automatically attempting to predict the next sequence of events, you call it awareness, artificial intelligence experts call it memory-prediction

Every neuron in your brain is expecting, 84 billion expectations firing all the time, there is no singular observer. Just billions of expectations.

There is no biological truth to "one see-er", it's a fiction, a social contract, an idea, it's not real. a convention, an artificial distinction, you have two eyes, two nostrils, two ears, why not assume that every person is two people? or believe that every person is half a person, until they meet their other half. the "observer" is a mythical construct, lacking an existence beyond the concept of the observer, it's a concept, not a reality

Your eyeball has millions of sensors, so you could say you are millions of sensors in each eye, I mean if you need your identity to be the observer, it's not really, you're not "the" mythical "observer" you know. you're not that

you can say you are trillions of connections (connectome), forming redundant neural concepts, redundant memories, that define our existence and every thought and emotion we will ever have in the semi hidden context that it is all a sea of redundant extremely complex conceptual models that serve as predictions to guide motor reflexes based on all life experiences

Individuality is a concept, like the observer, it's a distinction, from dualism, dualism is in some sense artificial, it's the map of reality, but it isn't reality, it's not the territory. Individuality as a concept is not a complete illusion, but it's also not completely real. Without the mind, there would be no such artificial concept as an individual, or an observer, but these concepts 'do not' have to have an objectively real reality to be useful. knowing that the observer is not really real, and knowing that the individual is not really real means that these concepts are no longer able to serve as the emperor's false clothing. The naked self cannot be clothed by any concept. You are not that.

you're not the artificial map of reality that describes what you are, you're more than your mind will ever know, but see that is a trick, because it is the mind that forms a model of the mind and the world around the mind, the world around the mind is a prediction in the mind, and yet the real you is the real cosmos outside the mind, this is very tricky to understand

everything you know about the real world is a prediction in your mind that is informed by the real world, you are the real world not the prediction in your mind, so in a sense you can only see the part of you that is a reflection of the real you

the world I see is a sparse reflection of the real reality that is the whole me

the mind itself can be incorrect, but you cannot be incorrect, you are objective, the mind is perpetually orienting itself using an overwhelming number of redundant guesses, in each moment, based on previous experiences, anytime the mind is producing something unpleasant that isn't you, that's a mind out of attunement.

remember you can't see the real you, not through the mind

you are pure happy joy
you love your true self so much, the mind loves your true self so much

be uninterested in unhappy thoughts, be apathetic toward unhappy notions or anything unpleasant, all negative things are boring

let the mind know this

then it will like a baby, stop playing the games you don't care about, and start playing the games you do care about.

Imagine you are a four dimensional diamond like polygon with eight sides, and each edge is golden fire like the sun, imagine you are objective, you are true, you are unchanging, you are eternal, then imagine that inside this is a cascading eight dimensional fractal, that includes a cosmos, every brain, including your brain, and inside your brain, existing as synaptic connections is a concept of you as "a four dimensional diamond like polygon with eight sides, and each edge is golden fire like the sun" Now you know your concept of you is a mere sketch of what you are. Yet while the brain is your window into grasping what you are. Your brain's image capture rate is .0000000000000001 of what is actually real. So mostly what you know about your golden fiery self is this incomplete prediction in a mind, you know you are truth, perfect, divine, objectively real, and at the same time, you know your brain needs to have a very partial & narrow view of the whole of what you're perceiving. All that you know about your real self is from a model in your brain. A model that is wholly informed by the real you, while at the same time always being an incomplete map of you, never the whole reality of how amazing you are. Eternally expanding, and forever incomplete.

a0487z ctp
Sep 16, 2013
(hebb)

I guess I think self is something of an illusion, a social contract, a story written in hebbian learning patterns via neuroplasticity ie when neurons fire together they wire together, thus stories are written in lto brains

a0489z ctp

Aug 21, 2013

(criteria, causation)

Choice is actually something physical we have done and taken ownership of. Every action one takes is a choice as soon as you take ownership of it. You can't really be consistent and at the same time say that one action you take is choice and one isn't.

all physical actions that take place among our cells like any other choice and no different than that.

It is a valid perspective to see that choices do happen at the level of cells, and whether we own that or not depends on our cells to eventually realize that is true and to own all of our cellular choices.

Neuroscientist Says Humans Are Wired for Free Will | Dartmouth Now

<http://now.dartmouth.edu/2013/03/neuroscientist-says-humans-are-wired-for-free-will/>

The only difference between what you acknowledge as your choices, and what is the result of luck and or determinism is that your choices are owned by you. That's the story you went with, choice is not otherwise any different from luck or determinism.

Choice is a physical action you take ownership of, nothing less, nothing more. If that sounds ridiculous read this science book

<http://www.amazon.com/The-Neural-Basis-Free-Will/dp/0262019108>

The Neural Basis of Free Will: Criterial Causation

a0491z

Created March 22, 2013

This was about my business Neo Mind Cycle the novel neurofeedback salon.

(ATP, neuron) Neo Mind Cycle is several things.

First Neo Mind Cycle is

a machine that combines neurofeedback with brainwave entrainment.

Second Neo Mind Cycle is

a philanthropic organization seeking the optimal health, functioning and performance of the essential cognitive faculty of reason, aka the human mind, via research into the latest neurotechnologies, neuroscience, and peer reviewed science articles.

Third Neo Mind Cycle is

online community on Google plus, a group on facebook, and a not for profit community to share the latest findings in research on the brain, artificial intelligence, nutrition, cognitive nutrition supplements, nootropics, ATP optimization with nutrition, EEG, tDCS, Brainwave Entrainment, AVS Mind Machines, and more.

Fourth Neo Mind Cycle is

an advocate of the true ketogenic diet for brain & body health, true ketogenic diets are 85% fat based, we insist you get all essential nutrients, essential amino acids, essential vitamins (Including Choline, Inositol, Vitamin C), and essential fatty acids.

Fifth Neo Mind Cycle is

an advocate of several non-essential nutrients for cell optimization such as D-ribose, Creatine, and smart drugs, nootropics, cognitive nutrition supplements such as Aniracetam. For a popculture reference see the film Limitless.

"Hold On To What You Believe" Mumford & Sons

Neo Mind Cycle in some sense represents the ever moving goal post of formulating an ideal combination of best practices, technology, learning, and wisdom, for brain & body health & fitness.

Neo Mind Cycle was built with a vision to support greater brain function in all of our communities around the world, It's about brain optimal nutrition, and brain optimal activities such as neurofeedback combined with other advanced neurotechnologies such as isochronic beats and light and sound brainwave entrainment. We have the technology to stimulate and encourage the growth of new brain function, new neurons, and new neural connections across many important regions of the mind via the principles of brain plasticity, and decades of research, as well as major studies done by the global community of interested scientists.

Also our true ketogenic nutrition program is optimized with all essential vitamins, amino-acids, fatty-acids, and other nutrients as well as very useful non-essential nutrients in order to maximize cellular fitness and ATP production. While this high fat low protein low carb core diet is for brain optimization, it's also not incidently an anti-aging diet, an anti-alzheimer's diet, and anti-diabetes diet, an anti-obesity diet, an anti-epilepsy diet, and an anti-cancer diet.

Neo Mind Cycle is for the greater good, based on Neuroplasticity, it's Neurophysics in action, and strong effective long term Nutrition Planning for both brain fitness and physical fitness.

The benefits of brain optimization include increased personal creativity, intelligence, memory, and success, via new vehicles of expanded self understanding, including more connections between regions of the mind.

The results feel awesome, and may often include great new insights, intuiting means more connections between, well, everything that has meaning to you.

Specifically stimulating associations between brainwaves in visual areas, audio areas, motor control areas, enhancing all of those regions.

IQ is not static, IQ can be increased here, via practices enabled by neurotechnology sold as packages to be done at Neo Mind Cycle in San Francisco.

Rs include more creativity, more great ideas, more successes, more mental flexibility, more performance under fire, more confidence, more happiness.

Including an acceleration of your eventual resolution of any subconscious psychological issues, from forgotten commitments, or inherited subconsciously via family entanglements.

This tech helps people with autism, ADHD, PTSD, addiction, SPD, just like regular neurofeedback, but more than that, it's a profound experience.

"Where is my Mind?" The Pixies

Neo Mind Cycle's uses state of the art neurotechnology to engage your brain in a dynamic way that makes it fun and effective.

The EEG measures brainwaves, sending that data into the computer where neurotechnology in the form of isochronic beats rides on your brainwaves back to you in the form of light and sound patterns that reflect the patterns of your brain waves back to you.

Unlike any brainwave entrainment you can buy on cd the brainwave entrainment we use is dynamic, as opposed to static, it rides on and changes in response to your brainwaves.

When you visit the main office in San Francisco to use the Neo Mind Cycle Machine your thoughts and feelings actually drive the light and sound you see and hear. The more you notice this the more soulful the looping pattern feels.

As your thinking, and moods change, so the lights and sound change,

If you think of a big prediction in the future, something really happy, the reverb or pitch might increase, and the light might get brighter or beat faster.

A session may involve sitting on the couch in my office with EEG hardware on your head, as well as head phones, and light emitting goggles.

a0492z

March 6th, 2013

A preserved note that was part of the planning for Neo Mind Cycle: The Neurofeedback Salon

(ATP, neuron) Please feel free to share interesting pictures, ideas, links, news, on any science topic, on neuroscience, on artificial intelligence, on technology, on nutrition, on something cool that your working on or thinking about or a vacation your planning. Post a picture of a beautiful island you want to visit. What are your hopes, dreams, likes, do you see the future in the context of science fiction? What is the future? What's coming?

Topics that are near and dear may include Brain Health, Nutrition, Fitness with Neurotechnology, Neuroplasticity, Neurophysics, Nootropics, Cognitive Nutrition, Cellular Nutrition, ATP Optimization, Energy, tCDS, fMRI, EEG Neurofeedback, Binaural Isochronic Brainwave Entrainment, AVS Mind Machines, Physical Exercise Discussion, Neuroscience in regards to Personality Types, Awareness Expansion Coaching, Artificial General Intelligence

However topics are by no means limited to predefined categories. Feel free to say something.

Neo Mind Cycle is a philanthropic organization seeking the optimal health, functioning and performance of the essential cognitive faculty of reason, aka the human mind. Neo Mind Cycle was built with a vision to support greater brain function in all of our communities around the world, It's about brain optimal nutrition, and brain optimal activities such as neurofeedback combined with other advanced neurotechnologies such as isochronic beats and light and sound brainwave entrainment.

We have the technology to stimulate and encourage the growth of new brain function, new neurons, and new neural connections across many important regions of the mind via the principles of brain plasticity, and decades of research, as well as major studies done by the global community of interested scientists.

Also our true ketogenic nutrition program is optimized with all essential vitamins, amino-acids, fatty-acids, and other nutrients as well as very useful non-essential nutrients in order to maximize cellular fitness and ATP production. While this high fat low protein low carb core diet is for brain optimization, it's also incidently an anti-aging diet, an anti-alzheimer's diet, and anti-diabetes diet, an anti-obesity diet, an anti-epilepsy diet, and an anti-cancer diet.

Neo Mind Cycle for the greater good, based on Neuroplasticity, it's Neurophysics in action, and strong effective long term Nutrition Planning for both brain fitness and physical fitness.

Some of our free services, will use EEG scanning technology, to help you to recognize your own brainwaves, as you link the patterns you see & hear with your thoughts & feelings you will gain a new level of mastery within the inner state of mind.

a0493z

Jan 11th 2013

(brains are for movement)

The structure of thoughts only begin to have meaning in the context of movement and rewards, brains are for movement

I think is that 'meaning' the word itself implies a spatio-temporal sequential analogy of causes that cannot be made if the temporal aspect is absent.

I think that spatial structures in lower dimensions can have meaning, but only in a four dimensional context of movement.

about an hour ago · Edited · Like

Abram Demski Does the Penrose tessellation lack meaning?

about an hour ago via · Like

Micah Blumberg The question might be where does the Penrose tessellation have meaning? To a two or three dimensional being? I just don't think so. Penrose tessellation begins to have meaning to a being in a four dimensional context of movement.

about an hour ago · Like

I'm not sure).

about an hour ago via · Unlike · 1

Micah Blumberg "Your argument appears to be that the Penrose tiling and other static structures can be meaningful, but only temporal entities can have understanding of meaning? Hm."

Close.

I'm kinda thinking that meaning is the morphism, in category theory it's the arrow between objects, creating an analogy. It needs a four dimensional context to be an analogy to another four dimensional context, and the bridge, arrow, or morphism as the device of isomorphic association, creating the analogy, that is yet another dimension, the meaning dimension.

You can also relate a monad to it's identity, or it's element, or it's object.

An object without time, without the context of movement (time) is like an object without an identity.

Without identity, what is meaning?

I guess to revise myself, it is perhaps not that Penrose tiling has meaning, but I think it is that meaning as a dimension can be added to, or connected to Penrose tiling.

9 minutes ago · Edited · Like

Micah Blumberg One of the many sources for the direction of my thinking on this topic:

Daniel Wolpert: The real reason for brains

Neuroscientist Daniel Wolpert starts from a surprising premise: the brain evolved, not to think or feel, but to control movement. In this entertaining, data-rich talk he gives us a glimpse into how the brain creates the grace and agility of human motion.

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

a0495z

October 16th 2012

(graph, layers, cortex, neuron)

Micah Blumberg An interesting note, Fred, is that Diffusion Tensor Imaging, in this case, is showing us the white matter of the brain.

This white matter in the center is myelinated axons that connect the grey matter neurons in the neo cortex to the rest of the body.

So it makes a lot of sense that they are look like ribbon cables, since they are thought by some to be serving a similar function to ribbon cables or fiber optic cables.

What isn't modeled here is the "grey matter", or the neo cortex, which is what some like Jeff Hawkins of Numenta, and at the moment Blue Brain is focused on modeling.

It's thought by some that the neo cortex with it's cortical columns, in a hierarchical structure can also be represented with a grid, but it's a vastly more complex grid

(a three dimensional grid with vertical flows of information, and vastly more horizontal flows of information, three axis, information flowing up and down, vastly more down than up, left to right, right to left, front to back, and back to front.)

What also isn't modeled is the extra power of large brainwaves which do reach beyond what they are directly connected too to trigger cells(parts of the grid) that are not connected via the grid format.

The neo cortex (what isn't modeled in these diffusion tensor images) is thought by some to be much more dense in it's complexity than the visually simpler myelinated axons featured in the diffusion tensor imaging as we have seen here.

about an hour ago · Edited · Like · 1

Fred Becker Thank you for the discussion. To see if I understand, I will read back what I hear. First, there are layers here and the physical geometry may support additional communication paths in a sort of virtual geometry even (e.g., large brainwaves might actually be large brain structures). Second, the white matter is a grid, but not necessarily the grey matter. The grey matter is still being modeled and discovered. So my thoughts about this: It would still be

interesting to know in what way the white matter grid structure makes and breaks connections. My main theoretical interest is whether the resulting connections form directed graphs and whether these graphs contain loops. Also, the same interest applies to the more complicated grey matter structure: are these purposed for forming directed graphs? Perhaps ultimately it is the large brainwaves only that are the directed graphs? I suppose that is the final idea here: are directed graphs employed anywhere in the brain and might these be used for actual mathematical computation that can be converted to matrix mathematics and hence equations.

39 minutes ago · Like

Micah Blumberg One strong possibility is that your brain isn't doing any logical computation. It's just doing intuition, which means it's making connections. (making connections to make associations, to make meaning, to make concepts, to predict causes, to model the world as you know it, to model words, to model the connections between beliefs, motor controls, consequences, etc...)

This connection making can model just about anything, including visual objects, words, sounds, paths you can walk, the links between rewards, consequences, motor controls, inhibitions.

The meaning of anything is perhaps just a token that represents the connections between associated points. A token being like a specific set of connections between numbers in a matrix.

This intuition can also learn the meaning and purpose of tools, including logic and reasoning, it can use these tools to vet its own intuition, and to attempt to explain its intuitive positions to other minds.

Intelligence may use logic and reason as tools, via intuition (from previously learned patterns), while at the same time being an entirely pre-logical pre-rational process of connection making. In short, it appears that intelligence is possible without any logical computation at all.

a0496z

October 11th 2012

(category, theory, perception cortex, map, semantic)

Micah Blumberg

Regarding Artificial Intuition by Monica Anderson, and Grok by Numenta: Is a semantic token the meaning of a word?

Is a semantic token a map of vectors between points above a certain threshold in various nodes?

Is a semantic token like a matrix, that can be understood as a spatial metaphor, or a description in category theory that defines or remembers a relationship between vectors that emerge in space?

Is model free intelligence about creating a model based on whatever emerges beyond the thresholds that filter significant patterns from noise?

I'm getting a new sense of the inner geometry of my mind.

and the geometry of my thoughts

See this video <http://medicalxpress.com/news/2012-10-fetal-neural-vision.html> this does not look like single character bits fed one at a time triggering points converted into vector mapped based memories. it looks like a morphing vector pattern being going through several stages of memory reduction in the architecture. Essentially because the burst runs out of steam, and then it leaves its vector mapped imprint. A spatial representation imprinted in the fired connections.

I hope replies reflect the subject of this group: Categories & Geometry of the Mind. Do you think meaning for intelligent beings may imply an unconscious topographical map of nodes that are themselves semantic tokens reflecting maps between points of above threshold data associations in a multi level pattern learning machine?

Burst of fetal neural activity necessary for vision

medicalxpress.com

(Medical Xpress)—A sudden and mysterious burst of activity originating in the retina of a developing fetus spurs brain connections that are essential to development of finely-tuned sight, Yale researchers report in the journal Nature. Interference with this spontaneous wave of activity could play

Like · · Unfollow Post · Share · 2 hours ago

Seen by 9

Juan Carlos Kuri Pinto likes this.

Micah Blumberg

Just imagine that when you see something, this is happening in your brain. Imagine that your having waves of sight pass through your brain tissue. Flowing in almost like water with special properties

It's not like feeding binary bits into a learning machine one at a time, it's like pouring in a data stream, words, pictures, bits, all jumbled together, and letting the structure sort it all out.

about an hour ago · Like

Micah Blumberg

The question I would have for Monica, and or Jeff Hawkins, would be, can you visualize the activity in your computer based connectome with graphics so that the activity looks like this. Would the activity look like this at all? Perhaps your visualized connectome would not have brainwaves?

about an hour ago · Like

Micah Blumberg

Do your semantic tokens (vector maps of associations) really come from emergent patterns that are imprints in the memory created by synthesized brainwaves?

about an hour ago · Like

Micah Blumberg

I like how in AN model, intuition is the emergent result from points plotted in a vector tree map that you can describe in category theory (the vector tree map not the emergent patterns). I think she describes it in C and or Java, but I think C and Java lack the fluidity that could happen in a functional language like Haskell. Where node memories can create vector memories and The model free nature means that the concept is the memory of the tree's reaction in a sense. With Haskell and an 80 core processor one could have each node in the tree creating emergent vector maps with the other activated nodes independent of a centralized process.

I like how in AN Model, the "concept" isn't pre-thought and pre-programmed, it's learned or built by the vector tree's memory system in response to the stream of data.

43 minutes ago · Like · 1

Juan Carlos Kuri Pinto Yup. I think Haskell is the right language for the geometry of mind:

<https://www.facebok.com/groups/programming.haskell/>

Programming Haskell

The Haskell Programming Language Haskell is an advanced purely-functional progr...

See More

26 minutes ago · Unlike · 1

Micah Blumberg Regarding the film clip again: It's as if the parts of the brain creating the brainwave are the parts that have reached their threshold point, resulting in a forwarding of the excess of that energy onward. Like water that fills up buckets, and if there is more water than buckets it spills onward, in a wave of running water until the remaining amount of water no longer exceeds the threshold of any bucket.

20 minutes ago · Like

Micah Blumberg The peaks of that brainwave also appear to be spread out as opposed to convergent like you might see in a pyramid like hierarchy.

18 minutes ago · Like

Micah Blumberg Think of the edge of a letter, the edge of a box, and the edge of a wall all at the same time. Each of those edges is in a different scale. The smallest you would expect to be a vector token from the lowest part of the cortex. and the largest would be a vector token from a much higher part of the cortex, even though they are both edges. Then if you try to visualize the edge that represents a piece of the electron's potential orbit around the center of an atom (if that exists even?) and the edge that defines a section of the orbital path that the sun takes through the galaxy. (how do we know our sun isn't leaving the galaxy or headed toward the black hole at

the center?) Now we have a situation where the conceptual scale for both the edge of the electrons orbit, and the edge of the suns orbit are so big they probably are both modeled at the highest levels of cortex, unless the association of the edge of an atom is so closely associating with small things that it gets thrown into a vector map that is a link between details from lower regions and concepts from higher regions. Maybe all the edges are size invariant, like vector graphics in a computer. Maybe doing computer vision by feeding it bitmaps is creating a disgusting scaling problem in vision learning that would not exist if "edges" in the v1 cortex were scale invariant vector patterns, that could be linked into any vector token, aka a semantic token, that is also linked to a size vector token, and a depth vector token, and a color vector token, and a smell vector token, to produce the appearance of a multi-sensory object in stages of brainwaves.

a0497z

Note created Oct 6, 2012, 12:10 PM

(I don't subscribe to all the phrases or ideas in my notes)

(category theory, observer, perception, electromagnetism, super position, array, conjecture, emotion, cortex, semantic, neuron)

In some interpretations of the Judaic and or Kabbalic tradition, G-d before he enters man is Ayn Sof, infinite boundless, nothingness, aka nothing, and then when he is inside man, he is still nothing, but he is the eye of the hurricane, and man's dissipative system is the vortex. So in a sense it means G-d is the space in the center of your mind. The inner peace. So in a sense it's not a matter of believing in Deity, but defining deity as a spacial and temporal metaphor within yourself and beyond yourself

"In some interpretations" the correct interpretation obviously is that G-d is nothing.
or zero

the prophecy is a prediction, like any prediction inside your mind

the prophet is you, it predicts you, a collective moshe

a second coming of Moses that is everyone, and noone

like the point in the Matrix, when Neo commits Satori

collective messiah

one in which you become one neuron, a fractal inside a collective

your brain communicates with other brains, the same way your left hemisphere communicates with the right hemisphere

it's not a religion it's a conceptual threshold, a paradigm

the tempo-spatial metaphor is the wisdom that philosophy consumes

so I say it's a concept that relates a spacial metaphor for philosophical digestion

G-d is food, brain food, food for your mind, your cells, which are hungry, so eat smart, and eat well

you are the messiah, the old wise people are the grandparent neurons, and the children are the v1 neurons

protect everyone

feed everyone

this is the alignment between short term, and long term, in a healthy mind

and a healthy society

If something doesn't exist does it have to equal zero?

How could there be any difference between two abstract numbers like 5 and 7 if neither exist, and both are really equal to nothing.

$5+7=0$ because numbers don't exist, they all equal zero

if you think of the number 7 for any length of time, it alters your brain's neurophysiology did you know that? it changes your brain, could this happen if the number 7 didn't exist?

every thought effects your neurophysiology

5 does not effect your brain the same way 7 does

some people see red with the number five, and green with the number 7, this is called synesthesia. synesthesia is real it's not made up, and it's been verified over and over again, but this would not be possible if these "non-existent" numbers didn't have an impact on your brain

You can take any topography, any three dimensional surface area, and convert it into number sets and functions, a program that is a two dimensional representation of a three dimensional thing. There is no difference between the version that is functions & number sets, and the actual three dimensional structure, it's just a conversation, so for numbers to not exist, is the same as saying that space doesn't exist

or it's to say that space time and gravity is "in your mind"

the entire cosmos is just "the metric" in general relativity, sounds a bit similar to "the matrix" doesn't it? "the metric" is a four dimensional description of spacetimegravity, you can think of spacetimegravity as a metaphor with density, curvature, and thermodynamic properties, all of which are descriptions "spatial temporal metaphors" for your mind to coordinate it's movements in both space and time.

if you subtract all of the descriptions from space, and all of the artifical abstract distinction, you get non-dualism, or space that is not even two things, no distinctions, and no artificial descriptions mean that space is not distinguishable from anything, it's not white, it's not grey, it's not blue, you can't tell the difference between your feet and a cloud in non-dualism, you can't tell the difference between a sharp knife and a butterfly without all the non-existent distinctions in your mind, that are no less and no more non-existent than any number

a number is description, and so is the spatial metaphor that is your foot

the second a number doesn't exist, neither does your foot really, because both are artificially conceived distinctions that are not there without your mind

thought is the memory-prediction, that is a conceptual formation of all that's there and real, in order to coordinate movement. every distinction your mind makes is like a number, in the sense that it's knowledge about the world that's in your mind, not in the world

numbers and functions are programs, the topoi of anything you see is really a visual program, if you see a bell drop, and hear a bell drop, and your brain aligns both patterns, it's not just an association, it's a topological program that you can share with any person verbally or in text, and the verbal way of saying what happened triggers the same neural firing as if you were to watch

or see a bell drop. What the human mind saves is a topological program that represents every kind of sensory memory as a shape, and transmits a snapshot of that shape to other parts of the brain when it is triggered by it's association in any input from any sensory modality, such as seeing a bell drop, hearing a bell drop, reading about a bell drop, or hearing someone describe a bell drop.

////////////////////////////////////

Some might say that without your mind, there are no trees at all, just atoms. So perhaps trees don't exist? A tree is just an artificial description assigned to a body of atoms & molecules & cells with particular properties. Trees are descriptions, and like numbers, they don't really exist (as information entities).

If a number is description and does not exist, then nothing else exists, because everything you know about the world isn't in the world, it's knowledge in your mind.

How do people think that their thoughts do not exist? Thoughts effect your physiology, if you think about Santa Claus or the Easter bunny that has a physical effect that causes changes to your brain's structure, and your neurons are connected to each other and every system in the body in one way or another.

Santa physically exists in your mind, because he is effecting your neurology. You can think Santa doesn't exist, and that's fine, but he's about as real to your mind as your hands are real to your mind. You can say your hands don't really exist either, and that's fine too. Thinking about your hands is causing real changes in your neurophysiology, just like thinking about Santa Claus.

If something truly doesn't exist, you can't think about it. It's impossible to think about.
and trees exist, but only as simulations

I would say that intelligence is neither subjective nor objective, instead it's predictive. You still get the "ctive" part. And predictive is more descriptive than subjective, while not requiring a meaningless context like objective.

How does prediction imply an irreversible timeline? How is implying an irreversible timeline a problem statement?

"under certain conditions timeline can be reversible (small time frames)" under what conditions, can you cite a reference?

"prediction is not the only model of intelligence" what model of intelligence stands incompatible contrast to the 'prediction' model?

How is it that prediction cannot predict reversible timelines? If time is geometry, as in spacetime, general relativity, then it seems like reversible spacetime should be predictable as well.

I don't think of time as something that's irreversible. The fourth dimension is part of spacetime geometry. The past might be changing all the time, the future might be changing all the time too.

How is data compression a timeless task?

The word task implies a temporal dimension. In fact the phrase "data compression" implies a temporal dimension, a point when the data is not compressed, and a point when the data is compressed.

"No you can't change the history. It is a part of initial conditions." I didn't say that you could change history. What I'm saying is that there is no reason to believe the past is static, fixed, and unchanging. With general relativity we realize that time is a dimension of space, like any other dimension. Space isn't morphing in three dimensions, it's morphing in at least four dimensions.

">How is data compression a timeless task?

Backtracking in the decision tree. You can return to any point of decision making and select an alternative. We can't do backtracking in environments with irreversible time because we can't restore the historical state of environment."

This data packet is too compressed. Can you take it apart and explain it in pieces so that I can understand more clearly the point you want to make?

Are you saying that prediction applies to online problems, and online problems have a temporal dimension?

Are you saying that prediction does not apply to offline problems, and offline problems do not have a temporal dimension?

It seems to me that prediction does apply even to offline problems, and offline problems do have a temporal dimension. For example. if you look at a static yet complex image for several minutes, you may notice something new about that image that you didn't notice at first.

The static yet complex image is an example of an offline problem, there isn't any new information, but your mind is able to predict something new about that offline problem after looking for several minutes.

So prediction does not only apply to online problems.

Now you say if you sent an AI program (not based on the principles of prediction) to search that picture for patterns, it's still a temporal process, from start to finish, for that program to run, execute it's functions, and finish.

The out put of the AI program, no matter how it was designed, can be construed as a prediction. Prediction=Result of Application, it's result is a prediction, just as the result of my thinking is a prediction. It's not the method that makes it a prediction.

Prediction is the secondary context, it's relationship to what we do with that information next.

1. Do the laws of physics exist?

1a. Are the laws of physics really laws?

1b. Do the laws of thermodynamics really exist?

1c. Does gravity really exist?

2. Do you exist because of the physical laws of the cosmos?
- 2.a Can you be separate from the laws of physics?
- 2.b Is your choice defined by the laws of physics?
- 2.c is everything you do really done by the laws of physics?
- 2.d are the laws of physics everywhere?

I don't know if there is a correct answer to this test. It's just something to think about. If you don't want to weigh in with anything besides "I don't know" that's fine. you can try plugging in some answers, filling it out, seeing what it looks like, then plugin a different set of answers, see how that looks like, then compare the two lists of answers to figure out which set of answers seem more plausible to you

Haskell is a lazy programming language, because if you give it an instruction that another programming language would go bonkers with, Haskell doesn't go bonkers with it, it just runs it once. It's not looking for all possible situations, it's okay doing a lazy result.

Awareness is just a bet, no matter how complete it seems, the lazy bet is the intuitive bet, the zen master can do it, but the ego cannot, the ego needs to be right.

Intuition is a sparse distributed representation of reasoning. What it loses in high resolution accuracy it makes up for in efficiency and ease.

Each method, reason and intuition are like tools in a tool box. I use the right tool for the right job. Not one tool to the total exclusion of the other.

not an illusionist, a teacher, "zen master" : I mean "zen teacher" and zen is not the practice of illusion, perhaps it is in some sense about removing illusion

a human thinks he is more evolved than the grass he walks on, but evolution does not see the human, and it does not see the grass, it only see's the replication of the dna code. anything that is alive today is on par with us, and you could think of the whole genetic code including all plants and animals as that which is evolving, instead of thinking of humans as having a separate evolution, separate even from one another

Oh you think consciousness is real? Where is that funny video, one second I have to get it and share it with you. You will probably like this

http://www.ted.com/talks/andrew_mcafee_are_droids_taking_our_jobs.html?source=facebok#.UGEMu59TYIJ.faceobok

Andrew McAfee: Are droids taking our jobs? | Video on TED.com
www.ted.com

"Up to this time most of people have more-or less similar self-model that make them compatible with each other." They have changed history since I left highschool. In your history books there was no such thing as war? Oppression? Religious conflict? Burning witches? Greek God's?

Whether awareness is categorically an "approximation" or "a bet" may actually be the matter of a secondary relationship (it's functional parameter outside the set (it's categorical context) that defines or filters out the more abstract function of it's interior calculus)

When is an approximation considered a bet?

When you modify your understanding of the interior process by its external application ie its internal function can be reinterpreted by what the brain is doing in the scenario that fits your model, and also it can be interpreted by the brain in the scenario that fits another model.

Such as:

The system of the brain is matching previous input with new input. It's never an exact match, so the match that's made is the best bet.

What I seem to approximate --> becomes a memory-bet.

The creative aspect of the brain might be a result of broken expectations or broken memory-bets, the bits that didn't match reality become creative distortions, sometimes stimulating neurons in an exaggerated way, like with "Rasa" in the context of art and music.

The brain is perpetually matching the wrong previous stimulus with the new information. See how this can be described as either a bet or an approximation, depending on whether or not you are inclusive of a particular function in a secondary relationship, ie its associated function.

Consciousness is an internal description, like every other description, like a number. If a number isn't real, then consciousness isn't real, if consciousness is real, then a number is real.

fyi I have no position on whether or not consciousness exists or does not exist, the point is that it has to be consistent with whether or not numbers exist.

because "consciousness" and "numbers" both belong to the class of "descriptions"

if you say numbers don't exist, but consciousness does exist, then your in self contradiction on some level

how do you know it's undecidable?

the dynamic behavior of a brain in its ecosystem is contained inside the description that is consciousness

just like the dynamic behavior of an intelligent program in its ecosystem is contained inside the description that is its file name.

on the contrary to the suggestion "self-perception of our subjective consciousness is not complete mathematically"

self perception is 100% mathematical

"file names were arbitrary within the length and allowed-characters limits of the operating system."

I'm not suggesting that consciousness has a file system similar to a computer operating system.

"it implies halting problem." please explain. fyi I am talking about an algorithm that defines one frame of consciousness, and the behavior of next frames at every level, in a subsequent frame

how does this true statement: "internal decision trees are limited in height." imply this statement: "All feasible tests for consciousness are incomplete"? I must be missing part of your logic here. How did you arrive at that conclusion?

Reproduction is a halting problem, like eating, and pooping, when will humans stop reproducing?

However there are categories of associations that can inhibit eating, pooping, and the process of reproduction.

Lets say reproduction is $B : C \rightarrow D$ (two people = c become d = three people)

$A \rightarrow B$, but B (the reproduction program) cannot happen until B exists.

B doesn't exist until A exists $Z : X \rightarrow A$

So inhibitory cells fire and prevent Z from firing. So reproduction does not happen. That's a halting moment. In both computer code, and in the brain.

The program can have an inhibitory region, that can inhibit any other part of it's program. Just like the brain, halting, or allowing. It's all included in the description of consciousness like the description of a computer program.

if there is a limitation to what a computer program can do, that should apply to consciousness as well, and visa versa

If information was non-physical, then numbers don't exist.

If information in your brain is physical, then numbers do exist.

I'm not saying numbers exist, and I'm not saying numbers don't exist.

(Patterns are in physical objects, but invariant to them.)

Likewise I'm not saying that consciousness exists, and I'm not saying that consciousness does not exist.

The Buddha (and higher mathematics) recognized that somethings can be both true and false, and or neither true nor false. Not everything is a dichotomy between true or false.

What I want to know is if both of you can agree that if consciousness is real (it's just description in your mind) that numbers are real (also just description in your mind) and if numbers are not real then neither is consciousness.

Can you both agree that numbers and consciousness are equally real and or not real because both are descriptions in your mind? I mean I don't see consciousness anymore than I see numbers. That doesn't mean they don't exist, just because I don't see something doesn't mean it doesn't exist. I don't see germs, or ultraviolet light. I've never actually verified through my own senses that the earth is a slightly squashed sphere.

How do you dismiss the argument (all things that don't exist are equal to a quantity of exactly nothing) Thus two numbers cannot be distinct from one another because they don't exist (they equal nothing, because what doesn't exist is nothing) Does it not make sense to you that every number is nothing if it doesn't exist? How do you dismiss that argument? What is your reasoning regarding that notion?

Note: I am really not taking the position that numbers exist, (nor the position that they don't exist) just interested in the brilliant reasoning abilities of the members of this group.

If information is non-physical then your physical brain can't interact with it. Physical things can only interact with other physical things.

If the numbers on your exam are not physical then your brain can't interact with them.

Your brain can only interact with physical information.

if information is non physical then it would pass straight through your brain, your brain could not contain any information (if the info is non-physical), you can't contain something that isn't physical, that's magical thinking

do electrons exist? do chemical reactions exist? do you think your physical brain can interact with non-physical things? Do you realize that saying information is non-physical, or immaterial is no different than claiming that information is supernatural and or spiritual? How can a physical brain interact with something that is non-material? It doesn't make sense. Thoughts are physical, and if you say thoughts are immaterial that's isomorphic to the religious person's argument.

There are no independent entities, from quantum physics we know that everything is literally defined by everything else, literally. A rock is a description, and so is a generality in your mind, no difference, both are descriptions defined by everything else in the cosmos, you didn't create any notion or thought unless you are one with physics, because the physics of the brain developed those thoughts.

does non-physical=spiritual? does immaterial=supernatural? if you think numbers are non-material doesn't that make you Jesus Christ or something?

Is information physical and material, does information, like numbers exist, Curt? Do people who think numbers don't exist think that because of the illusion of dualism that you spoke of Curt? Is thinking that numbers are non-existing like the magical dualism you spoke of Curt?

if a number is a physical pattern in a brain, and if a concept is a physical pattern, and a rock is a physical pattern, and your foot is a physical pattern, are they all equally real, equally physical patterns, do they all exist?

cough, um, isn't it true that electrons can be in superposition. Isn't it true electrons like other quantum particles can exist without a location in spacetime until observed? Isn't it true that an electron (like any particle) is a potential difference between mass and the higgs field? doesn't this suggest to you that spacetime itself is just a potential difference? that we are just a possibility neither truly real, and neither truly not real, simultaneously? it seems that all the information in the cosmos added together is just a possibility, or a potential difference between total mass and total emptiness (a zero higgs field). How can A mean A in so many places if the three lines that make up the capital letter A does not exist potentially, as a possible form between mass and the higgs field like everything else, before the human mind recognizes it? Are you saying that lines do not exist in space abstractly? Are you saying that abstractions do not exist independent of locality? Then do you deny that particles can exist independent of locality?

cuz you humans might be non-real abstractions, no more real than the abstract numbers that you hyposthesize as non-existent, can you prove that you are not an abstraction?

further how can an AI distinguish what is real and what isn't? How does an AI realize that a rock is more real than Santa Claus? how does an AI know that an abstract number does not exist as a potential form in superposition until it is localized with observation?

because non-locality (of particles) destroys the argument that numbers can't exist without a physical location?

taking the position that numbers are between existing and not existing, and so are we?

How can we know that existence fully exists, as opposed to being a potential between existence and non-existence?

Is the existence of existence perhaps less than a self evident axiom?

Is the existence of existence perhaps a logical fiction?

Is the existence of existence an article of faith?

How do we know existence isn't just existing as code, just like numbers only exist as code?

"Whether something exists truly doesn't depend on the knowledge of the observer. The representation of the something's existence on the observer's "

A number isn't defined by a separate observer, its defined by the whole cosmos, by everything.

The whole cosmos defines everything you think, including numbers, not the dualistic illusion of a separate observer who creates numbers separate from the whole cosmos.

"we don't have privileged, "raw" access to reality (or, to be more precise, we *do* but our resources are nowhere near the possibility of processing reality *as it is* - a sea of interacting elementary particles)."

Everything in your brain is raw reality, your brain is not separate from spacetime, that's dualism. If your point is that the map of reality in your head isn't the actual territory it represents who has argued to the contrary? Still the form in the map may be a potential existence just like the form of a rock, just like the form of an electron, existing in superposition without locality before it exists in a location.

watch this

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

Aaron O'Connell: Making sense of a visible quantum object | Video on TED.com

"Oh, I can quote in full, worry not.

> "Everything is literally defined by everything else."

This, is bullshit (and quite clearly a variation on the general sentence I provided above) No that's documented fact, its a part of quantum strangeness, did you watch the video?

The point is that your reasoning for dismissing the existence of ghosts must dismiss the existence of branes from string theory for the same reason. A healthy mind cannot perceive branes.

So if you admit branes could exist then your argument for dismissing the existence of ghosts is either invalid, or not yet fully articulated.

I am in favor of little pacman style ghosts with a little yellow Ms Pacman to eat them.

on what grounds to you have to state that reality is objective instead of a potential between real and not real? (a probability) and how much have you studied quantum physics and also neurophysics? either study should produce lots of doubt in your mind over what is real and or not real.

it seems that in a quantum universe probabilities are part of the facts, how can you deny this? do you dismiss quantum physics like a creationist dismisses evolution?

the notion of the cosmos pre-quantum was an objective deterministic certainty, post quantum the cosmos became was an indeterministic probability. Remember Einstein objected to quantum physics at first "God does not play dice"-Einstein but probability is proven, quantum physics is a proven science, and it applies to the whole cosmos. "reality is a persistent illusion"-Einstein not an objective reality.

So again how can you be certain that the cosmos is objectively real and not just a probability (a potential difference between real and not real like an electron)?

how do you that the whole cosmos did not exist in super position before it had a location? how do you know that numbers do not exist in superposition before they exist as a map in your mind? how do you know that everything isn't literally defined by everything else? aside from your axiomatic belief, what proof exists?

if the rules of quantum physics apply to everything as you say then you have defeated your own argument, and it wasn't necessary for me to say anything at all.

it means existence does not have to be a true or false dichotomy, reality could be true and not true, and neither true nor not true.

The rules of quantum physics doesn't ever concern metaphysical nonsense like "difference between the real and the unreal". And don't talk about probabilities with me until you have actually learned at least the basics of the math. Take Yudkowsky's introduction, for a good example. Read it. Get it. And then come back. Preferrably while *not* being high.

thinking that existence is either true or false is flatlander

The reality is neither true or false - it simply *is there*, and it is our descriptions of it that can be more or less true, depending on how accurately they depict their slice of the territory.

it might be there and also not there at the same time, simply there is an on position, its there on average. Space is empty on average, and the rest of the time its matter. Thats what there and not there at the same time means, thats space as a probability, or as a potential. mass is 99.99999% empty space, but only on average, its between mass and a zero higgs field, its not simply there, its potentially there, or there on average

the cosmos is a potential between total mass (real) and total zero higgs field (nothing) but only on average, thats why its a potential, and not simply there

In metaphysics the cosmos is simply there, even if in reality it's potentially there, or there on average.

However in the end it was revealed that actually he was making a metaphysical argument, "existence is simply there"

while my argument demonstrated that physical reality is potentially there instead of objectively there.

Reality is a definition.

A definition written by each human mind in collaboration with reality. If every sparse distributed representation, every instance of stored or transmitted data, is in some sense a prediction about what's out there, and in another sense a reaction to what came before. Then in at least one sense Reality as defined by the human mind, is a prediction about what is real,. A prediction about what is real is a probability. That's why how you define data actually must be consistent with how you define the result. How do we define reality as not being a probability when our entire brain thinks only in terms of one memory-prediction algorithm? The only thing we can ever know is a probability. To think we can know more than that, to think we can know that the universe is more than a probability is an extreme viewpoint.

The brain does not think in terms of one algorithm. That's like saying Lisp is one algorithm. It may have a common structure, but you can't sort the meaning of phrases and sentences the same way you train a machine on a set of pictures to recognize a car for example. There might be a common structure, but like Lisp, that common structure allows a broad variety of very specific specializing algorithms. Some of them you might describe as long term prediction, or short term prediction, but other you might describe as just sensing the difference between two textures, or between light and dark, or associating dark, with street, with stranger, with fear, at the micro scale they might be made up of memory-predictions or memory-reactions-associated-in-a-tree but we don't really call them all prediction algorithms.

Finally the point about the brain being like it's own programming language like Lisp was actually a good one. Reality is still a definition, even if the definition is more complex than just a prediction. The definition is whatever it is, and perhaps all the extreme views of today will be the moderate views of tomorrow. Who knows. With Ken Wiber's map of cultural integrations, what he calls integral life, it's clear to me that I don't need to worry about any of this. In time wisdom prevails, or we all die.

If a man is not his ideas, then he is meat, and if a man's actions are not congruent with his words then he is spineless meat, without integrity or reputation. The grand ideas expressed by the fool must be borrowed, and not originating from that fool. Otherwise it is not reason that chooses a man's choices, instead it is the random impulses of chemical imbalances and man's mind is damned eternally. Such is the hope and fear of AGI, that we may build happy minds, that are kind, caring and loving, and that we may, because of our own chemical imbalances build horrible minds, war machines, to hate and kill, for such is the whimsy of man, crazy enough to engineer his own demise.

a0499z

June 7th 2012

Note from Jun 7, 2012
(cerebral, cortex, neuron)

Maybe you should read every book written by Richard Dawkins, Christopher Hitchens, Sam Harris, Daniel Dennett Maybe you should read every book written by, and every video talk by

Richard Dawkins, Christopher Hitchens, Sam Harris, Daniel Dennett, Steven Hawking, Steven Pinker, Michael Shermer, Peter Singer, Steven Wineberg, Paul Kertz, Lawrence Krause, Ray Kurtzwell for starters, Ray Kurtzwell for starters, there are thousands more scholars, historians, academic, scientists, physicists, astrophysics, neuroscientists, evolutionary biologists, most of the most brilliant people alive today, most of the exceptional people in history.

Human beings are different from other species because of a larger cerebral cortex, this neo cortex is a modeling system, it maps every aspect of our sensory experiences, and these maps become our expectations and beliefs about what is going to happen next, the basis of intelligence is memory-prediction, that means awareness equals expectation, its a mechanical thing, its different from a computer because the hardware and software are one, it is constantly reprogramming itself to learn (map, model, predict) so as to coordinate reactions, every thought involves neurons firing in a sequence activating sensory modalities in your very own simulation of reality, the matrix, its yours mind.

"Basically, how can you KNOW anything in a definitive sense?" the human mind makes predictions, bets about what is real, all you ever have is your best bet, all a man ever has is that, a bet about what is real. Even if you declare "I know, beyond any doubt, with certainty, the truth" you still only have your best, if you say that you really still don't have any certainty, you don't need certainty. A very small amount of faith is enough, an amount of confidence that no bigger than a chia seed or a mustard seed is all you need, to act on your best bet, to carry through, and to accomplish gigantic tasks.

a0500z

Jun 2, 2012

(cerebral, cortex)

When you have an experience, that is actually a sequence of sensory moments linked together in time. Each of those sensory moments is correlated in the brain by a group of cells that fire together. If they fire together with some novel frequency they begin to associate with one another, so that when you have a slightly different experience, that is vaguely similar to the experience you had previously a different group of cells fires that may include one of the cells from the other previous group of cells the fired, because one member of the original group of cells fired, it's associated partner cells shift into a ready state, they are now expecting to fire. This is the basis of memory-prediction in the brain. Now it might be that when you have a thought, you are having somewhere between 100 thousand and 100 million memory predictions being triggered in close temporal and spacial proximity. However despite these large complex numbers, the essential mechanism of memory-prediction is the same. Your memory-predictions are your expectations, your beliefs, your bets, your suspicions, and your every thought about everything. The cerebral cortex is a modeling system, the models are predictions, we predict what is there, self awareness is a prediction about the modeling system that is making predictions. Your cortex has a model of the body, and behaviors associated with the cortex, that

model is "you" you are a prediction, in the brain tissue. I mean your at least a prediction in the brain tissue, but not only a prediction in the brain tissue

So in an absolute sense you are really seeing you, but that is because brain tissue has created a model of itself, and it's surroundings, in order to coordinate movement.

do you use gps?, Global Positioning Satellite data on your phone or computer, part of your map software? that's pretty cool right? my grandfather led the team that invented that and put the first gps satellites into space, want to know who paid to create this cool gps on your phone? the military paid for it. they also paid for tons of medical research that now saves lives around the world, they have invested big in research that has paid on in revolutionary new technology that helps disabled people walk again, or pick up things again, that's not cool to you because the military paid for it? or is it not cool because tax payers funds went to those projects because of military interests?

a0502z

A note uploaded Jul 8, 2014, about Neo Mind Cycle

(ATP, neuron)

Neo Mind Cycle is several things.

First Neo Mind Cycle is

a machine that combines neurofeedback with brainwave entrainment.

Second Neo Mind Cycle is

a philanthropic organization seeking the optimal health, functioning and performance of the essential cognitive faculty of reason, aka the human mind, via research into the latest neurotechnologies, neuroscience, and peer reviewed science articles.

Third Neo Mind Cycle is

a online community on Google plus, a group on facebok, and a not for profit community to share the latest findings in research on the brain, artificial intelligence, nutrition, cognitive nutrition supplements, nootropics, ATP optimization with nutrition, EEG, tDCS, Brainwave Entrainment, AVS Mind Machines, and more.

Fourth Neo Mind Cycle is

an advocate of the true ketogenic diet for brain & body health, true ketogenic diets are 85% fat based, we insist you get all essential nutrients, essential amino acids, essential vitamins (Including Choline, Inositol, Vitamin C), and essential fatty acids.

Fifth Neo Mind Cycle is

an advocate of several non-essential nutrients for cell optimization such as D-ribose, Creatine, and smart drugs, nootropics, cognitive nutrition supplements such as Aniracetam. For a popculture reference see the film Limitless.

"Hold On To What You Believe" Mumford & Sons

Neo Mind Cycle in some sense represents the ever moving goal post of formulating an ideal combination of best practices, technology, learning, and wisdom, for brain & body health & fitness.

Neo Mind Cycle was built with a vision to support greater brain function in all of our communities around the world, It's about brain optimal nutrition, and brain optimal activities such as neurofeedback combined with other advanced neurotechnologies such as isochronic beats and light and sound brainwave entrainment. We have the technology to stimulate and encourage the growth of new brain function, new neurons, and new neural connections across many important regions of the mind via the principles of brain plasticity, and decades of research, as well as major studies done by the global community of interested scientists.

Also our true ketogenic nutrition program is optimized with all essential vitamins, amino-acids, fatty-acids, and other nutrients as well as very useful non-essential nutrients in order to maximize cellular fitness and ATP production. While this high fat low protein low carb core diet is for brain optimization, it's also not incidentally an anti-aging diet, an anti-alzheimer's diet, and anti-diabetes diet, an anti-obesity diet, an anti-epilepsy diet, and an anti-cancer diet.

Neo Mind Cycle is for the greater good, based on Neuroplasticity, it's Neurophysics in action, and strong effective long term Nutrition Planning for both brain fitness and physical fitness.

The benefits of brain optimization include increased personal creativity, intelligence, memory, and success, via new vehicles of expanded self understanding, including more connections between regions of the mind.

The results feel awesome, and may often include great new insights, intuiting means more connections between, well, everything that has meaning to you.

Specifically stimulating associations between brainwaves in visual areas, audio areas, motor control areas, enhancing all of those regions.

IQ is not static, IQ can be increased here, via practices enabled by neurotechnology sold as packages to be done at Neo Mind Cycle in San Francisco.

Results include more creativity, more great ideas, more successes, more mental flexibility, more performance under fire, more confidence, more happiness, and profound expansions of inner peace.

Including an acceleration of your eventual resolution of any subconscious psychological issues, from forgotten commitments, or inherited subconsciously via family entanglements.

Neo Mind Cycle helps people with autism, ADHD, PTSD, addiction, SPD, just like regular neurofeedback, but it's more than that, it's a profound experience that stitches your mind together, via the principles of neuroplasticity & operant conditioning.

"Where is my Mind?" The Pixies

Neo Mind Cycle's uses state of the art neurotechnology to engage your brain in a dynamic way that makes it fun and effective.

The EEG measures brainwaves, sending that data into the computer where neurotechnology in the form of isochronic beats rides on your brainwaves back to you in the form of light and sound patterns that reflect the patterns of your brain waves back to you.

Unlike any brainwave entrainment you can buy on cd the brainwave entrainment we use is dynamic, as opposed to static, it rides on and changes in response to your brainwaves.

When you visit the main office in San Francisco to use the Neo Mind Cycle Machine your thoughts and feelings actually drive the light and sound you see and hear. The more you notice this the more soulful the looping pattern feels.

As your thinking, and moods change, so the lights and sound change,

If you think of a big prediction in the future, something really happy, the reverb or pitch might increase, and the light might get brighter or beat faster.

A session may involve sitting on the couch in my office with EEG hardware on your head, as well as head phones, and light emitting goggles.

a0503z

note uploaded on Oct 26, 2013

(ATP, synap, dendrite, criteria, causation, neuron)

*Your lack of fitness, your lack of willpower, and your depression may all have a common cause. I bet it has nothing to do with evolution, culture, the human condition, your conditioning, your epigenetics, your heritage, your feelings and instead that it has everything to do with your metabolism, what your eating is causing the depression, lack of willpower, and the being out of shape at the same time. If you increase your ATP production your cells will be able to make more energy, and that means more zest for life, no more depression, more willpower, and more fitness.

To take a page from Paleo diet theory, our metabolism is about 200,000 years old, we are genetically similar to humans from 200,000 years ago, and only recently in the past 10,000 years people have started to eat wheat and beans, but it really got a lot worse since the industrial revolution. Wheat and beans have all these nasty anti-nutrients that clog metabolism, then processed sugar and flour came along and now people are able to consume toxic amounts of sugar and wheat very quickly. Since humans have not evolved very much in the last 200,000

years this really isn't about our evolution, but instead it's about our metabolism, respecting our metabolism with the foods we eat, and the nutrients we get.

Willpower might be a myth in some sense, if your body is unable to produce enough energy that might feel like you have little willpower, if your body is able to produce a lot of energy that might feel like a lot of willpower, to your cells energy is ATP

http://en.wikipedia.org/wiki/Adenosine_triphosphate so you could take supplements like Dribose, Creatine, Nad, Acetyl-L-carnitine, 7-keto, Nadh, and you can stop eating grains, beans, and sugar (including sweet fruit, juices, and smoothies) and eat a diet that is 60 percent fat and I guarantee that will empower your willpower a hundred fold, because your metabolism will be producing a lot of ATP, you will be building muscle, losing fat, and feeling like a little deity. fyi I have only lost 170 pounds since January 2010 and gone from size 58 pants to size 36 pants. So it worked for me.

There is the issue of choices, or the inner mechanisms of learning from errors and change, its about cell based criterial causation, neurons recognize information as coincidences in the timed firing of other neurons, and the transmission of neurotransmitters resets the coincidence detection firing criteria of other neurons, what fires are axons, and dendrites, the criteria is not only synaptic weight from neurotransmitters, its also spines, dendritic spines which change rapidly, and they are connected to the mitochondria in the neurons, the mitochondria create ATP in the aerobic metabolism of a cell, and they work so hard they import ATP from glial cells that are interconnected with the neurons metabolism. So if you don't think ATP has anything to do with your executive function, think again.

If you didn't realize this sentence I guarantee this will empower your willpower a hundred fold] was intended to be funny and not serious, then I must clarify, it's humor. There are no real guarantees in biology and everybody knows this. Please don't make fun of me for using humor to promote a really cool idea with a lot of research behind it. The idea that metabolism is at the core of energy production, cell function, decision making, willpower, and executive function isn't a controversial one. It's an ordinary idea, and what I am sharing is akin to sharing a cheese platter, you don't have to eat. I'm not pushing "The Answer" on anyone.

I do not mean to imply that ATP enhances or creates either habits or traits. Since ATP is energy, having more ATP means having more energy. Having more energy does change the criteria that is considered in the deliberative process of decision making. For example if I have a hundred times more energy I might plan a very active day, I may choose to get ten times the tasks done, I may work out extra hard at the gym, I might do these things, but also I might not. Having more energy can change some of my criteria that goes into my decision making process, but there are other reasons, other criteria that are factored into my decision making process, and its possible that no new behavior results. Having more ATP makes a difference and you might choose to be more physically active, I know that was true for me. I went from a sedentary life, weighing 405 pounds, to an active life weighing 235. I actually go to the gym six days a week, and I walk for hours outside the gym daily. My 405 pound self could not keep up because his energy was going into fat sacks, leaving his muscles weak, his metabolism was inhibited by

grains, beans, juice, and smoothies, so his (my) ATP production was really low. A sister once said to me, when I was that heavy, that I was "not trying hard enough". At that time I might have been scratching my head wondering why my willpower was so weak. When I started optimizing my ATP production it all changed, I had more energy, so I wanted to workout, or walk for seven hours, or climb stairs, taking my dogs with me. Eventually I was running which I don't do now because its high impact. Will ATP empower your willpower? I said suggested it in humor, but its interesting to think about. Did I become more active because I had more energy? Would you become more active if you had more energy?

a0505z

the experience of time is related to co-processing bulk
because more attention seems to slow down time

the brain is an input output buffer,

homomorphic or category theory encryption blockchain for anonymous transactions that are
verifiable on a distributable ledger.

a0506z

Sep 19, 2012

(category theory)

If you want to know why your brain may be able to store infinite information, its because you can store infinite information in a curve, my current favorite hypothesis, is that a neuron's topography is a program, and it is shooting an electrical packet of data that represents its whole topography, this topoi is actually a program, like a computer program, because in category theory the topoi is a visual representation of sets (numbers) + function, therefore the spatial topography of a neuron is a program, with sets and functions represented by the shape of the neuron, and transmitted like digital music is transmitted, like an acoustic pattern in electrons.

Micah Blumberg presents:

Neurons are Programs transmitting their shape theory (document deleted for some unknown reason)

a0508z

(celebellar, bci, attention)

BCI tech with a Camera & AI you could identify ADHD symptoms

Postural sway and regional cerebellar volume in adults with attention-deficit/hyperactivity disorder

<https://www.sciencedirect.com/science/article/pii/S2213158215000972>

"Mapping microstructural gradients of the human striatum in normal aging and Parkinson's disease"

<https://www.science.org/doi/10.1126/sciadv.abm1971?fbclid=IwAR2EF4UaYagqeC3K85B3gAojOXs1RtvrPhnQOdQTj4tbBZku1rzoE-n5uW8#.Ytb8FGqhFDQ.facebook>

(lets tag this with Parkinsons & Alzheimers Brain Disease to link those notes together)

"The Role of Exosomes as Mediators of Neuroinflammation in the Pathogenesis and Treatment of Alzheimer's Disease"

"Exosomes are secreted by multiple types of cells and regulate a variety of signal pathways through the transmission of various signal molecules, participating in the information exchange between cells (Valadi et al., 2007; Yin et al., 2020)."

Exosomes are Vesicles, lol, that is where a whole bunch of research on Vesicles (I mean Exosomes) was hiding. (humor intended)

"The Main Pathogenesis of Alzheimer's Disease"

"These insoluble A β fibrils accumulate and spread to the synaptic gap, which interferes with synaptic signal conduction (Rabbito et al., 2020; Wang et al., 2020), leading to the formation of insoluble plaques"

"Exosomes are lipid bilayer vesicles with a diameter of 30–150 nm"

"Exosome membranes are mainly composed of phospholipids and proteins" so a vesicle is not just a sack of fat (humor) there is protein in it.

"As an inflammatory mediator, exosomes induce neuroinflammation through information exchange between neurons and glial cells. They can diffuse in interconnected neurons and transport A β and tau proteins through the endosomal pathway and axonal transport (Polanco et al., 2018)."

hmm... endosomal pathway

"neuroinflammation, neuron loss, aging, gene mutation, metabolism and oxidative stress could also promote the development of AD (Yin et al., 2020), especially neuroinflammation, which is considered to be the third characteristic feature of AD."

https://www.frontiersin.org/articles/10.3389/fnagi.2022.899944/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXXXX_auto-dlvrit

Somewhere in my notes is an article on the proteins in Alzheimers being common in aging

"Protein Blobs Linked to Alzheimer's Affect Aging in All Cells"

<https://www.quantamagazine.org/protein-blobs-linked-to-alzheimers-affect-aging-in-all-cells-20220628/>

Alzheimer's

Brain Cholesterol Regulates Alzheimer's Plaques

<https://neurosciencenews.com/cholesterol-amyloid-19120/amp/>

'The Role of Exosomes as Mediators of Neuroinflammation in the Pathogenesis and Treatment of Alzheimer's Disease'

https://www.frontiersin.org/articles/10.3389/fnagi.2022.899944/full?utm_source=S-TWT&utm_medium=SNET&utm_campaign=ECO_FNINS_XXXXXXX_auto-dlvrit

"Uncovering One of the Driving Forces of Alzheimer's Disease"

"Study reveals how the Alzheimer's associated Tau protein changes from normal to a diseased state."

<https://neurosciencenews.com/tau-alzheimers-21008/>

"Neurodegeneration 'clumping proteins' common in aging process"

<https://phys.org/news/2010-08-neurodegeneration-clumping-proteins-common-aging.html>

"Protein Clumping Found to Be Common in Normal Aging Process"

<https://www.genengnews.com/news/protein-clumping-found-to-be-common-in-normal-aging-process/>

Since Covid-19 causes lots of artificial oxidative stress, increases lots of inflammation, arguably we will see the population age more rapidly, and develop more neurodegenerative diseases compared to previous generations of people.

Which is bad for a lot of people. The good news is we might solve aging this year, based on this line of research.

Okay lets rethink this, the protein clumps are causing inflammation, and neuroinflammation is causing AD, and the vesicles or exosomes are transmitting the inflammation that makes us age.

So really addressing neuroinflammation is a treatment option for slowing AD. Hmm... reminds me of that note on carbohydrates providing neuroprotection

"Breakthrough study demonstrates the pivotal role of p62, a protein, in suppressing neurodegenerative disorders via selective autophagy"

<https://www.sciencedaily.com/releases/2022/07/220701102759.htm>

"Previous studies have reported that the abnormal accumulation of the tau proteins may be selectively suppressed by autophagy pathways, through the p62 receptor protein (which is a selective autophagy receptor protein). Says Maiko Ono, "This protein's ubiquitin-binding ability helps in the identification of toxic protein aggregates (like tau oligomers), which can then be degraded by cellular processes and organelles."

"Overall, the findings of this study prove that by eliminating and, hence, preventing the aggregation of oligomeric tau species in the brain, p62 played a neuroprotective role in models of dementia."

"Melatonin ameliorates Parkinson's disease via regulating microglia polarization in a ROR α -dependent pathway"

"Neuroinflammation caused by microglia activation is one of the most important mechanisms of Parkinson's disease (PD)¹. The death of dopaminergic (DA) neurons in the substantia nigra pars compacta (SNc) is multi-factorial and mechanisms responsible for the cell loss remain largely unknown. As the barrier of innate immunity and a main mediator of inflammatory response, microglia cells can be activated, secreting a variety of pro-inflammatory factors². Microglia activation and increased inflammatory burden exacerbates the pathological consequences of PD³. However, the relationship between microglia activation and DA cell loss needs more investigation."

<https://www.nature.com/articles/s41531-022-00352-5>

a0509z

Sep 22, 2012

Includes an equation for neurons
(cereb, cortex, neuron) Electronics and psychology.
do you like neurophysics?
do you know a lot about electricity?

how much do you know about neurology? for example
the action potential
in a neuron
if it was similar but different to a lightning strike
well the question is about the electron wave/particle

H.V.

It basically comes down to what the molecules ionic charge is.

Micah Blumberg
yes

H.V.

Most molecules are stable in nature, meaning they have an equal amount of protons and neutrons, thus making them ionically neutral.

Micah Blumberg
the ionic charge in the dendrite becomes more and more negative, and the ionic charge in the branches leading to the synapses become more and more positive, and then the action potential is the electal surge

H.V.

Electricity, simply put, is the transfer of protons and neutrons between molecules. Often times, the molecules will fuse, creating an entirely different compound.

Micah Blumberg

is the action potential, do you think, equivalent or different to the difference potential of a lightning strike?

is "action potential" a "difference potential"?

H.V.

I believe it to be differential. Whereas the action potential is dependent solely on the dendrite and its branches, lightning that occurs in nature is free to strike wherever the proper amount of unequal electric charge exists.

Micah Blumberg

different? or differential?

H.V.

Most meteorologists would say that lightning takes the path of least resistance to discharge; this is quite untrue, actually.

Micah Blumberg

do you know differential calculus?

H.V.

Lightning not only strikes based on the fastest route to discharge, but also along the route that offers the maximum potential release of energy. The greater the instability in molecules along a lightning bolts path, the more likely it will follow that route.

Yes, I took calculus in high school.

I took it alongside trigonometry.

Micah Blumberg

wow

H.V.

It was a boring class, except for my teacher. He kept it pretty exciting.

I also took AP chemistry that year, as well.

I have since focused my primary research on genetics and psychology.

3 hours ago

Micah Blumberg

what if the neuron was a differential equation, where the topology of the dendrite branch was a change in X, and the topology of the synaptic branches were a change in Y, and the action potential was the divider / that together defines the topology itself as a memory that tracks changes. As if a neurons topology spelled out a differential equation like this: $\text{change Y} / \text{change X}$

3 hours ago

H.V.

The greater the disparity between the two, the greater that particular dendrite would fire, triggering the associated memories and actions that go with it.

3 hours ago

Micah Blumberg

with lightning there are return strikes

3 hours ago

H.V.

The greater the chance that particular dendrite would fire, I mean.

3 hours ago

Micah Blumberg

your making perfect sense

and then after the dendrite has triggered the axon too fire the disparity is equalized or is it just closer to being balanced?

2 hours ago

H.V.

Recoil lightning is a result of the effects I just mentioned above. Sometimes when lightning choose the path of greatest electrical disparity, it becomes uneven upon the discharge, and the recoil lightning is triggered to balance out the reaction.

2 hours ago

Micah Blumberg

and there is no chance of that happening in a neuron?

It seems that most of the information in the brain is traveling towards our senses, far more than what is coming in from our senses

it puzzles many people

it's as if it's saying that your thinking is so much bigger than what your actually perceiving

2 hours ago

H.V.

Are you familiar with the sensation of "phantom pain" or "unnatural/irregular pain?"

2 hours ago
Micah Blumberg
sure

2 hours ago
H.V.
I believe that to be due to recoil fire in dendrites. Most practitioners attribute it to muscle memory, but there are people that experience phantom pain years after losing that limb/nerve ending, and irregular pain cannot be attributed to muscle memory due to it's nature.

2 hours ago
Micah Blumberg
phantom limb pain came up during a neuroscience talk
it has to be in the brain, because the limb isn't there
recoil fire in the dendrite
wow
you really do belong in my neurophysics group
wow you

2 hours ago
Micah Blumberg
that's an awesome idea

2 hours ago
H.V.
There is a feeling associated with certain memories and when a dendrite recoils due to a greater than anticipated disparity in differential charge, it has the potential to trigger dendrites that are otherwise inactive due to the lack of the nerves it controls being present.

2 hours ago
Micah Blumberg
hmm...
your right
so when the axon charge flows backwards that's pain?

2 hours ago
H.V.

Recoil lightning, and consequently, recoil fire of dendrites, is nothing different than a domino effect. One reaction triggering another due to the proximity and force of the first discharge. It stands to reason that inactive dendrites can thus still fire, if a significant enough charge occurs in the dendrites located in and around the inactive one.

2 hours ago

Micah Blumberg

you said recoil in the dendrite, but not the neuron as a whole?

I mean...

2 hours ago

H.V.

There is essentially no difference between normal and recoil fire other than the direction in which the charge travels. Thus, recoil fire can have a variety of effects, since it is not being determined by what we perceive; it is instead changing our perception. Recoil fire is likely responsible for night terrors, flashbacks, phantom and irregular pain, involuntary nerve response (twitching, RLS), and hallucinations (tactile, auditory, and visual).

2 hours ago

Micah Blumberg

Have you ever done brainwave entrainment?

Mind Machines?

Neurofeedback?

2 hours ago

H.V.

That is why my current research into psychology involves studying patterns of behavior to see if the same response is generated each time. If I can successfully prove that each time a person does or thinks a given thing, that they always experience the same involuntary reaction due to a recoil fire, I can prove that these effects can be treated medically through EST. Furthermore, it would give credence to my theory that not all symptoms are a result of chemical imbalance in the brain.

2 hours ago

H.V.

I have done limited work with what is known as binaural therapy.

2 hours ago

Micah Blumberg

Oh wow, you are incredible, and awesome!

I would love for you to share your ideas in the group!

2 hours ago

H.V.

Otherwise commonly referred to as binaural beats.

2 hours ago

Micah Blumberg

yes

youtube now has all kinds of free brainwave entrainment, binaural and isochronic beats

a friend of mind is using neurofeedback to drive the brainwave entrainment

it's a isochronic light and sound feed back loop, he calls it Neo Mind Cycle

it's like your brainwaves are driving the entrainment beats

2 hours ago

H.V.

Bejeweled 3 comes packaged with binaural tracks for playing through the zen mode, and I am testing it's effects combined with the game on a small group of people currently.

2 hours ago

Micah Blumberg

wow!

that's awesome!

you know all about NLP too don't you?

many in AI research make the argument that choice is an illusion

2 hours ago

H.V.

Choice is an illusion. One cannot elect "not" to choose something. By not choosing to do anything, one is, by default, "choosing" to do nothing.

2 hours ago

Micah Blumberg

Imagine the whole brain as a differential equation like the neuron. The Apple represents a change in X, and then your insight into Apple's behavior is the difference potential, and your

new understanding of Apple is Y, along with a tiny a corresponding difference in the topology of your brain.

2 hours ago

H.V.

If Apple's actions = change in X (X) and my perception of Apple = change in Y , the result would be my new perception of Apple, which = Z. The equation would thus be stated $(X)/(Y) = Z$. The greater the disparity between Apple's actions (X) and my perception of them (X) would result in a greater change in my new perception of them (Z [(represented as "did they act as I perceived they would?")]).

2 hours ago

H.V.

Stupid facebok. That thumbs up should be (Y).

2 hours ago

Micah Blumberg

Okay so if a neuron is $(X)/(Y)$ what is Z? the next neuron it's connected to?

See the idea I had was that Y is your perception

and that when your perception changes it's now $Y+1$ or $Y-1$, or something like that

it's a different Y

however Y can also be associated with other perceptions about Apple which may be represented by other cells

Can Z describe the new topology of the neuron as a whole?

What I mean is, if Apple changed it's behavior, and a neuron fired to represent one part of the Apple that you are considering at the moment.

Scratch that.

2 hours ago

H.V.

Z is the result of X over Y, it is an ever evolving equation. Once Z is calculated, calculate it again. Repeatedly. Infinitely.

2 hours ago

Micah Blumberg

Oh I got it.

Z represents the change in the neurons topology.

2 hours ago

H.V.

Z changes depending on both the actions of Apple (X), and my perception of them , and when you combine my perception of them with what they actually did, you get Z. Z then turns into Y, because it is no longer my "new" perception, it is my current one. X is entered back into the equation over Y whenever Apple acts again, and Z is recalculated. Following me?

2 hours ago

Micah Blumberg

yes

brilliant

your brilliant

2 hours ago

H.V.

So yes, Z is the topology of the neuron AFTER Apple performs an action (X). X is combined with Y to generate the new topology.

2 hours ago

Micah Blumberg

that makes so much sense

2 hours ago

H.V.

I knew it would.

2 hours ago

Micah Blumberg

so it's like our neurons are memories, and yet the vast majority of electrical information is flowing down toward the senses, not up away from the senses, what do you make of that? do you buy the idea that ht cerebral cortex is a hierarchy?

2 hours ago

H.V.

What we perceive to be real is a combination of things we already feel to be true and what we are currently experiencing. Obviously, what is actually happening cannot change; it either is happening or isn't, thus, misconception about the world is generated from the one source that CAN be altered; our own mind.

about an hour ago

H.V.

Take frostbite, for instance. Frostbite is a result of the cold. Most people are aware of this circumstance when they get frostbite. But imagine if a person, for some reason, was not able to verify that it was indeed cold and got frostbite. They would feel pain associated with being burnt, and due to their misconception of the actual conditions, would thus believe they are being burnt.

18 minutes ago

H.V.

Ah, you're back!

18 minutes ago

Micah Blumberg

yup

actually I was here the whole time

17 minutes ago

Micah Blumberg

you just gave me so much to think about

it could take me a week or more to generate a response

17 minutes ago

H.V.

Ha, it gave me a chance to compile it and add it to

a0510z

Jul 13, 2017

(cerebral cortex, neuron)

ok so when you have an experience a bunch of nerve cells fire in a group, if you have that experience several times that same group of cells will fire together several times, this creates an association

(June 15th 2012)

, because neurons that fire together wire together, next up you have a slightly different experience that is someone similar to the previously mentioned experience, so one of the cells from the previously mentioned group of cells fires with a new group of cells, but the cells that didn't fire, because they significantly associated with one of the cells that did fire, well those

cells go into a "ready" state because they are now expecting to fire. That expectation is the basis of memory-prediction, it's how our mind maps reality, through sequences of expectations, that link cells together based on previous experiences. Memory-prediction is how information is coded in neural activity. That's what thinking is, a prediction, the whole cerebral cortex can be said to be a modeling system, of the world we predict is real, and all the models of the world we perceive with our mind through our senses are really made up of countless predictions, encoded in neural activity.

Almost all the time you are "having" (not necessarily the right word) life experiences that are similar to thousands of other previous life experiences in a multitude of ways, so all the sensory input you get all day is creating associations with all kinds of previous life experiences, cells in the front layer of curves and lines in the visual cortex may for example trigger a past experience of the letter a, which readies a bunch of networks from apple, to andy, if you also see the color red in another front layer of cortex, now the cells that correlate with the letter a and the color red are ready and firing as you think about them, then you read the number five, because the lines and curves in a front layer are associated with another layer of cells that have been strongly associated from particular past experiences, like the learned word alpha 5 on a red background, so the bits of data that came in, followed the path of expecting neurons, based on previously linked association, to unite with a previous learned group of associations that represent "alpha 5 on a red background" and then the brain notices that the red background is more orange-red, so while the cells that associated when you learned alpha 5 on a red background have now fired, and inhibit nearby patterns there is now an association reaching out to another group that is the learned representation of orange-red. Each learned representation is literally a map constructed out of sensory input via space and time, represented in a three dimensional x,y,z axis in the cerebral cortex. If that exact position of the cortex was damaged via stroke, tumor, or other injury, it's possible that that map of spacial/temporal associations will be remade by another portion of the brain, provided you're interested and committed to learning the alpha 5 on red or red-orange background association again. Your previous associations, in terms of mapped life experiences, are the basis of your expectations in life, that's the metric by which you judge your experiences. Who is experiencing your life? Well your previous experiences are. That's the narrative of you, the song of soul, the symphony of I am. New experiences can have a tipping point where the internal maps of associations that represent you undergo a fundamental shift, the pattern that is you becomes more capable of interpreting life experiences in a useful way. Passing the tipping point, into a new internal narrative, is a threshold experience, many times means your going to be capable of handling bigger problems than you were before, or it means you will be able to handle the same problems with greater ease. It's your brain improving its own maps, out of necessity, experience, so that your brain is able to represent alpha 5 on a red/orange background with fewer cells. Perhaps alpha 5 gets merged with the coffee shop you are always at when you see alpha 5, so that increasingly large groups of associations can be represented with increasingly fewer neurons at a higher level in the cortex, similar to the subject line of an email, or the headline of a news article, or the title of a paper. By the time we get to conscious thinking, we are at the news headline of news headlines, we are at the grand summary of grand summaries, the conscious thoughts are macro summaries of vast blankets of group associations learned through life experience so that no

matter what direction you look, you can spot many complicated objects almost instantly, because they have all been linked via short cuts that use few cells to trigger vast networks of previous associations, that help you predict what is real now.

Micah Blumberg So information is encoded in neural activity via learned associations in bunches of cells, these associations are mapping our experiences, and providing expectations to other bunches of associated neurons representing maps of other internal representations, corresponding with life experience. In a way we are these previous life experiences, predictions that represent previous associations including association between maps of associated cells from all the other previous life experiences. The out put from these cells, when the neurons fire, is our expectation of what we are experiencing now, our expectations come to meet our new experiences almost like the waves coming to meet the shores of our nations. As the shore of new experience comes in, it's sorted by or into the previous maps of reality, until such a time when it's overwhelmed by the new data so much that a major change in the internal maps takes place, representing a change in a person after a very significant life experience. Pushing this threshold is something I am very interested in, that's why I do neurofeedback with brainwave entrainment with light and sound as my business!

Awareness as we know it, is really a dynamic electric expectation, self-awareness comes about because of a feedback loop, between brainwaves, body movement, and incoming senses. When you add neurofeedback, you expand your self-awareness even more, which means gaining even more self control. Neurofeedback is cool, what I do at my office (Neomindcycle.com) is even more cool then traditional neurofeedback!

a0511z

Jun 30, 2017

(cortex)

Lets say that the human mind is a computer system, and that personalities are accomplished by the persistent brainwave patterns, like software, and that with structural changes to the brain, or oscillatory flow pattern changes to brainwaves from drugs, personalities can change.

This is the case with Phineas Gage, a pole went through his head, his personality changed dramatically. Some people drink lots of alcohol & it disrupts their thinking pattern, their behavior, their words, their actions, and their motivations change.

So along these lines, of with the idea that personality is vulnerable like a software program, I once asked the silly sounding question "What if there are others in your mind? What if there are other beings that travel between minds or beings that only become activated when you are in a certain group with certain people with a certain combination of information assets? Until now, I haven't been able to fully articulate the strangest sort of idea I have had about the code of our minds."

It is silly. Of course. It's also interesting, because the patterns that we simulate, in our own minds, when we conceptualize how another person's mind works, those patterns are physically incorporated in our patterns. Our understanding of someone else's mind, can perhaps permanently augment or modify our own personalities. Like absorbing pieces of someone else's software.

The idea is strange, and silly, but it's not entirely implausible, no neuroscientist today can say this idea is impossible.

So this note is from June 2017, I just updated it a little with what I wrote above, in June 2022, but the original idea came from a psychedelic experience that I had in San Francisco sometime between 2008 and 2010 (I think.)

The Neural Lace Journal - Article by Micah Blumberg on June 30th

I had this awesome dream recently where I had to fight my clones, but each one of them had a slightly different twist on my persona/personality, some were evil. It reminded me of Nvidia's Isaac program where robots are simulated in bulk, the best one is chosen, and then variations of the best one are then simulated, then the best one of those is chosen. It kind of makes me wonder if my brain was simulating different versions of me in order to pick the best one. When I woke up I felt that one of the good clones had won, and my personality was now in a sense tailored by an internal evolutionary algorithm to serve the most optimistic goals of the organism that is me based, the cellular biome, based on a summary calculation of all the available data.

I imagine the human mind having an operating system, that has multiple levels of beings, running across multiple brains, with the individual being un-aware of the non-individual beings but the non-individual beings being fully aware of the individuals, because the non-individual beings would be sort of at a higher level in the hierarchical structure of minds operating system.

I imagine that my conscious mind is inside a sandbox, unable to access all the information that is available to my brain, but that beyond that sandbox there is another reality, for other conscious beings, that run inside the software of my mind, and travel between minds, and exist in multiple minds simultaneously.

In the brain when someone is trying to focus on something we see a lot of inhibition in some areas of the brain and a lot of excitation in other areas of the brain, the idea here is that what is happening is an attention gain modulation, just like audio gain modulation, the parts of you that are paying attention to something you are looking at become excited and that means they exhibit more activity, more excited cellular activity, more information transfers between cells in some areas, and perhaps in part because the brain must maintain it's overall electrical equilibrium you will see that other areas of the brain become inhibited at the same time, these other parts of the brain will exhibit less neural activity, less blood flow, less electrical activity that might result from mass action potential firings, the inhibit parts of the brain should correspond to

everything you are not thinking about during that window of time. The inhibited parts of the brain should feature the unconscious material.

Perhaps the conscious mind is sand boxed because the inversion of my perspective that has been cultivated as the primary selection of active blocks of my active conscious neural circuit must first be created and then inhibited in order for me to have this perspective of being an individual. In other words maybe all the parts that do not lead to a conscious sense of self have to be inhibited, in order to manufacture a sense of identity.

I am also imagining a sort of natural high bandwidth wireless data transfer between brains. Speech is and body language are examples of high bandwidth transmissions, eyes and ears are examples of high bandwidth receivers. Could we also transmit information via electrical signals or electromagnetic signals via touch?

I am imagining a secondary hidden neural network feedback loops, self-aware concept loops, that communicate with unconscious speech, or with hidden speech patterns hidden inside ordinary language.

Have you ever had a conversation and then couldn't remember what you talked about afterwards? Or only understood part of the conversation but were aware that you received information that you didn't fully understand?

I am imagining that it might be possible for brains, as universal computing machines, to run alternate consciousnesses, or alternate self aware feed back loops, neural circuits hosting the concepts that make up the building blocks of alternate beings that are hidden from the conscious mind that you know as yourself.

Of course I am suggesting that the self is a self-aware feedback loop inside our brains within the natural neural networks of our brains, and this loop consists of blocks of concepts that take turns being activated in the rich club neural circuits of the mind.

One perhaps silly idea that keeps me up late at night sometimes is the idea that there may be alternate conscious beings in your mind, that interact with alternate conscious beings in other minds is strange but I think it could be possible.

I say that because we have multiple levels of networks happening in our brain simultaneously. We have six layers of neo cortex, you can see we have a neural network, a glial cell network, a mitochondrial network, you can also say that we have an ionotropic brain and a metabotropic brain, and we have multiple neural circuits running concurrently and possibly in patterns that are separate from one another. We have trillions of connections between cells, and perhaps we have tens of exabytes of data running through our minds concurrently in every millisecond, and perhaps we have different spectrums of data that run past each other at different frequency rates like Delta, Theta, Gamma, Beta, Alpha, Gamma, High Gamma, and Lambda etc.

I don't know if it's plausible to have multiple minds running simultaneously in one brain but I suspect that it is possible. These alternate minds might be very abstract, or they might exist on timescales that are either too frequent or too infrequent to notice, such as beings that are really small and fast with short existences, or beings that are really long large and slow that take a really long time to process a single thought all the way through, it might take decades for some of these collective beings to self-realize and to have conclusions about something or another. It just might be that there is a vast amount of space for an incredibly deep and rich internal operating system that is simulating not only our everyday reality but also multiple universes worth of data, which might explain how people can go on fantastic journeys with DMT through multiple universes living entire lifetimes in minutes. It could be that there is just a vast amount of mostly inaccessible information in the brain, and that we don't access this information normally because it must be inhibited in our low power minds to shape the very nature of who we are and what we are doing here in this place. As if we exist as the abstract relief opposing everything else, yet defined by everything else, or rather defined by our relationship to everything else as all things in the cosmos are defined. The strangeness of quantum physics is that any physical object is literally defined by everything else in the cosmos. Everything is related to everything else, and so I would not be too surprised if it turned out that the material of a conscious mind is defined by polar opposite information that is inhibited to create the contrast of a conscious distinction which is in a sense a contrast inherently, a distinction that is a disorderly disruption from the whole of indistinction or the holism of a universe that has no thought and no disturbances.

Suppose however these hidden thoughts not separate beings but instead they are separated thought processes. Thought processes in some instances serve abstract ideas and in other instances they might serve the collective unconscious, or they might serve some kind of collective such as a company or a country or an idea or a tribe.

These separated thought processes might exist as the inhibited thought remnants of thoughts that have been inhibited in such a particular way so as to cultivate the tempo-spatial shape that is you, you the tempo-spatial ionotropic self-aware brainwave pattern would then exist as a sort of cookie cutter selection of thoughts models that are congruent with the shape of a self-aware individual defined by the negation of patterns that do not take the shape of a component of a self-aware individual.

So parts of you, that are unconscious are unconscious because they haven't been selected by the brain to be apart of the conscious feedback loop of conceptual patterns that are included in the structure of your conscious self, and these parts, separated out of the necessity to construct a viable sense of individuality in a brain may exist as non-individualistic data packets, the unconscious and sometimes subconscious material of the brain that can sometimes interact with the conscious mind, and can sometimes interact with the conscious, subconscious, and unconscious minds of other people without you knowing about it, or having full awareness of it.

With Neural Lace we should be able to prove or disprove the existence of alternate beings running on brains, and begin to analyze group behavior in new ways, to understand the

collective dynamics of group behavior and to understand collective mental illnesses better, so that we can treat the disturbed masses of humans who are mentally ill in great numbers and unconscious of that fact.

a0512z

Oct 2, 2013

(criteria causation, emotion, neuron)

I think there should be some reasonable disassociation between a dna pattern and what "neural circuits" actually do. It may be very far fetched to blame behavior on genetics when probably behavior is information driven.

Some want to pin down behavior differences on genetics. I think its possible that malformed proteins, and mutations that result from metabolic syndrome could causes diseases and abnormal behaviors. I don't think we are strictly determined by genetic makeup but I suspect some people who haven't heard of criterial causation may believe so. If you can imagine each neuron is collecting information via very specific electrical patterns, and that neurons are working together to do this, so that they are exciting and or inhibiting each other in order to get the pattern right. Then its possible to imagine that these cells are making selections based on information, what they call criterial causation, a kind of biological choice making process that is not determined by genetics <http://www.amazon.com/The-Neural-Basis-Free-Will/dp/0262019108>

It seems like there is some evidence for a genetic 'likelihood of behavior' I have wondered about the nature of long term memories, that result in new protein structures, structures that define a mental reflex, proteins that can be transmitted from person to person, most likely from mother to child, blood transfusions, or other fluid exchanges. I say this because I like to imagine that the characteristics of a personality may sometimes extend outwards into many people. As if the Maria personality has many bodies but each of them think they are the one Maria, some of them only have pieces of her. We also transmit information, ideas and notions, stories that can effect us emotionally and form long term memories, new proteins that change the structure of our cells, that change the criteria for when neurons fire. I think it might be good

I will come out in support of the hypothesis that behavior is caused primarily by information?

Here is why: We all know that there is a long history of smartly dressed people saying behavior is driven by complex interactions between genetics and the ecosystem, and other factors, but why not information primarily?

Imagine ideas, notions, stories, beliefs driving the vast majority of behavior far more than genetics or environment.

Imagine that even if the entire earth is your environment, you still have a galaxy's worth of complexity in your brain. So the environment is too simple to define your behavior.

Imagine you have millions of lines of genetic code, but quadrillions of unique connections and directions in your mind. So your genetics are too simple to define your behavior, let alone all the connections your brain makes.

Imagine that the environment + genetics could never be enough to explain behavior and that the big idea missing here is that information drives behavior!

David I do think temperments can be passed in families. For a long term memory to form a cell must make a new protein, this protein inevitably alters the sum physical shape of that cell, changing its electrical firing criteria, there is no reason that this new protein cannot be passed to others through fluid exchanges, blood transfusions, from mother to child, causing the long term memory to take hold in a new mind, like a copied mental reflex. This kind of transferred physical memory or predisposition might effect a dog more than a human because of the size and complexity of the human brain. That idea of genetic predisposition or transferred mental reflexes between family members may not be something that can be ignored. I still support the hypotheses that in humans at least information primarily drives behavior. Perhaps also in dogs I don't know.

David I do think temperments and predispositions can be passed in families. For a long term memory to form a cell must make a new protein, this protein inevitably alters the sum physical shape of that cell, changing its electrical firing criteria, there is no reason that this new protein cannot be passed to others through fluid exchanges, blood transfusions, from mother to child, causing the long term memory to take hold in a new mind, like a copied mental reflex. This kind of transferred physical memory or predisposition might effect a dog more than a human because of the size and complexity of the human brain. That idea of genetic predisposition or transferred mental reflexes between family members may not be something that can be ignored. I still support the hypotheses that in humans at least information primarily drives behavior.

a0521z

(note on this note, I saved this to revisit the top down & bottom up causation argument in the brain later on, as written it's not very useful at the moment but I plan to improve & expand this argument with the idea of top down memories, and expectations encoded in brainwave oscillations are top down drivers that receive & intercept & modify incoming sensory drivers & outgoing muscle signals)

(criteria, causation) Top down vs bottom up

Criteria causation abstract information detection. From bottom up

And top down regulation

Its a different logic,

Abstract sensory based

Multimodal

But still logical

In that our modal multi-modal representations sum up into a decision

Our brains process information in discreet

Steps

May not appear logical

Holism is not holistic, its just a more inclusive model

That organisms are robot like, machine like, not like symbolic AI, neural networks,

If we

Doesn't operate with words or symbols

The brain isn't filled with knowledge and data

Impossible to understand

Words created socially

If you were born and lived in a forest by yourself for 10,000 years and Left notes for yourself about where things were you would develop language and

Color

The human brain is not fundamentally differently from animals

In the moment

Response to physical cues

Sense

If the brain contains knowledge and information it is comprehensible

Yet you say the brain self programs and understands

Presumably sithou knowledge or information to

a0523z

note from Sep 19, 2012

(dendrite, synap, neuron)

I didn't say they communicate an infinite amount of information, that's a total misunderstanding of what I wrote

they communicate a sparse distributed representation of their complex structure

storing an infinite amount of information and communicating an infinite amount of information are two different things entirely.

it's the difference almost between sending a photograph of Taj Mahal and sending the actual Taj Mahal

a photograph being an SDR of the actual place

"Its impossible phsically" this statement is not an actual counter argument that re-articulates the original argument and demonstrates how the original argument is incorrect. Channel capacity is not storage capacity. Those are two different things.

Ryan Cahoon

sparse representations work by the premise that the transmitter and the receiver already have the same codebook/set of bases. sparse representations don't allow you to transmit more information, only to more efficiently utilize the information that is transmitted at least on an abstract level, channel capacity and storage capacity are the same thing. storage is just communication with time delay. if i have a magic device that can store an infinite amount of information in a finite amount of space/time, i can simply mail that device to you, and i've created a communication channel. additionally, you would need some sort of communication channel(s) to input and output the information in storage

Micah Blumberg

neurons do have the same "genetic" codebook/set of bases, so SDR would work from one neuron to the next

the point is not that the SDR is allowing you to transmit more information, the point is that the neuron contains vast sums of information that are represented as an SDR with each transmission, if the SDR does not change when the neuron fires, then it's as if changes to dendrites are not communicated at all.

It would be like data being stored, but never transmitted, because the SDR would be identical before and after the change to the dendrite if the SDR did not change in respond to changes to the whole shape of the neuron.

Channel capacity in the context of noise refers to the rate of information you can send all at once.

Noise would negate a perfect transmission of infinite information, but no one is suggesting the transmission of infinite information, only an SDR of infinite information.

If there was total information loss when a neuron fired, then the most that a whole neuron can represent is 1. Then your whole reality consists of 86 billion one's and zero's. Because at that point the information in a dendrite, and in a synapse is going no where fast. It would be as if every person you met said the exact same thing. "Hi" and never said anything else. Because every time every person opened their mouth (neuron fires) it's the exact same pulse) So it would be like talking to someone, then they reduce everything you said to 1, and then they went and spoke to whomever. There would never be anyway to know anything except the number 1. My cup fills up, and I empty my cup, my cup fills up, and I empty my cup. My cup fills up and I empty my cup.

Lets say you have three neurons, A, B, and C.

A is connected to B, B is connected to C, but A and C are not connected at all.

When A fires, it fills up B, zeroes out all the information that A sent into "Hi" and fires, filling up C.

So now C has zero awareness of any neuron it's not directly connected to.

Yet you have your whole field of vision, which requires a distributed representation of many neurons, the detail are v1 neurons, the bigger stuff physically and conceptually like your whole computer might be represented by v4 neurons and other neurons, each part of what you see is represented by all these neurons.

How is it that you have a whole picture of everything, if each neuron can only see the data from it's directly connected neighbor?

because it's getting reduced to "Hi" in the single neuron pulse.

Which small group of connect neurons is running your whole field of vision do you think?

There is no way to unify the vision of billions of neurons, if the single electrical pulse of a neuron firing is reducing all the information to an identical message every time like "Hi"

The electron itself is conveying a detailed temporal/spacial modality to the rest of the brain.

That's how you have a field of vision, that includes input from all your neurons.

6 minutes ago · Like

a0524z

(electromagnetism, emotion)

I'm quoting myself making the same point in the same debate with two totally separate people "Mathematics is not outside reality. Information can't be separated from physical reality. Information is physical, despite the fact that it can transfer between physical mediums. Your ideas are based in the illusion called dualism, where you think your mind and abstract thoughts are not unified with the physical universe, but everything is electromagnetism, your brainwaves, yourself, your information, your thoughts, your emotions, your brain, your body, the earth, the cosmos, its all physical, math is physical, I reject the conclusions of your article. I believe that my conclusion is supported in part by constructor theory."

a0525z

(emotion, self-aware, cortex, neuron)

Self-Aware Networks, Human+Artificial, NerveGear

Micah Blumberg is the Founder of Self-Aware Networks, Human+Artificial, NerveGear

Lets explore Neuroscience to build next generation Artificial Intelligence, and lets connect the brain to the machine to extend our minds.

We are, meaning our brains are, self aware three dimensional neural networks.

Lets learn to how to build self aware three dimensional neural networks. Lets build artificial versions of ourselves. Lets make artificial souls. Let there be artificial souls that mankind can make. These are the core topics that this group intends to focus on and explore.

On the one hand it is valid to say that this is a group about sentient artificial intelligence, human level, emotionally self-aware machines, and it is also a group about the human brain.

Our knowledge objective will lead to understanding how to build next generation technologies. New technologies may include artificial neurons & glia that can interface and replace real neurons & glia. Artificial brain tissue, artificial cortical columns, artificial cortex, artificial brain stems, and whole artificial brains will result from the knowledge work of this group.

Nerve Gear: Its an esoteric term for Brain Computer Interface used in the anime series sword art online. Nerve gear means brain computer interface or mbraib machine interface, other terms might be neural link, neural lace, fulldive. Nerve gear is a bidirectional brain to computer interface, to read and write to the human brain and the computer.

Nerve Gear is a next generation brain computer interface (BCI) and the development of this technology means reading and writing to the human brain as if the brain was just a special kind of hard drive.

With Neural Gear we can change what appears to be reality at the push of a button, and also so we can download what appears to be reality to share it with others.

It would be as if your eyes were cameras and your ears were microphones, and the data is machine learned by the natural neural networks of your brain, but essentially it means your an organism that developed the ability to create analyze and react to video and audio feeds via it's eyes and ears.

This is a group of researchers & cognitive architects committed to the task of designing & building Nerve Gear.

That means in part Virtual Reality and Augmented Reality via a direct connection between your brain and a computer so that you don't need glasses. AR and VR without glasses.

To accomplish this we need to build new brain computer interfaces (nerve gear), we need to apply deep learning neural networks to medical imaging in new ways, and we need to figure out the communication protocol that allows groups of neurons to send and receive packets of data as brainwaves to and from one another.

Neural Gear will enable computer directed Lucid Dreaming, and the technology is the key to developing artificial neural cortex that can connect to the human brain, and in addition it is the key to technology needed to develop artificial brains that we can use to transfer the human mind into.

The accomplishment of this goal involves a broad number of research subjects, like computational biology, cognitive neuroscience, how memory processing works in the dendrites, cortical column networking protocols, bio-compatible artificial neurons.

Topics that belong in this group include papers on Cognitive Neuroscience, Computational Biology, Computational Neuroscience, Deep Neural Networks

Topics that are welcomed include Brain machine interfaces, Computational Biology, Cognitive Neuroscience, Neural Lace, NerveGear, Brain Machine Interfaces, Neurophysics, Psychophysics, Neuropsychology (but not general psychology.)

Topics related to major companies working in deep learning or on brain computer interfaces or on neuroscience related news as long as its not promotional or spammy material. No solitions, no advertising for conferences, no asking for papers, no hiring or recruiting, nonpromotions of other clubs or other groups.

a0526z

May 19, 2012

(dopamine) Why does Adderall turn me into a lethargic, unmotivated zombie?

unitedtruthseekers.com

I have searched high and low looking for answers and I haven't found any. The funny thing is, I keep seeing so many people out there experiencing the same thin...

Unlike · · Unfollow Post · Share · 9 hours ago

You like this.

Micah Blumberg I think it's making the person burn through all their dopamine faster, resulting in a performance boost in the beginning, and a lack of motivation later.

<http://www.wired.com/wiredscience/2012/05/the-neuroscience-of-effort/>

The Neuroscience Of Effort

www.wired.com

While writing this post, I will get bored. I will get tired of looking at these words and crave a distraction. And so I will click away from...

7 minutes ago · Like ·

Micah Blumberg You can try adding brainwave entrainment, a mind machine, avstim audio visual stimulation, music, or go running, biking, swimming, the idea is if you give your brain a ton of stimulation, it might create and release more dopamine, and this should counter act the zombie like feeling, resulting in you spending more time in the initial stage.

a0527z

Jun 12, 2012

(dopamine)

Your probably not lazy, you have a finite amount of dopamine that your brain can release each day for all it's activities. If you spend all that will-power on writing, facebok, thinking, doing whatever you do, gardening, then there will be very little motive left to do the other things beyond that. Yes I'm equating your dopamine with your willpower to do things that might earn rewards, the lower the odds of an immediate reward, the less interesting it becomes, but if we had more dopamine we would do more of the stuff that has lower odds of reward

Micah Blumberg

There are things you can do to increase your brain's performance so you can do more in a day, exercises, and nutrition related things, but the other idea is that we can do more of other things by giving up some of the ways in which we use minds and bodies now.

a0529z

Apr 26, 2014

(LTP, dissipation, neuron)

Monica Anderson I reserve the right to disbelieve experiments that imply a paradigm shift in six disciplines. Extraordinary claims require extraordinary evidence.

44 mins · Unlike · 2

Micah Blumberg no such thing as extraordinary evidence, but there is ordinary evidence
<http://www.nature.com/.../fearful-memories-haunt-mouse...>

Fearful memories haunt mouse descendants

www.nature.com

Genetic imprint from traumatic experiences carries through at least two generations.

37 mins · Like · Remove Preview

Monica Anderson Seen it. Smells very fishy and I'm going to ignore it until there are TWO replications.

32 mins · Unlike · 1

Micah Blumberg that's probably wise, not sure why it seems fishy or extraordinary, except that you probably have a different preferential logic

27 mins · Like

Timothy John Tiedemann <http://bioscience.oxfordjournals.org/con.../61/8/588.full...>

Behavioral Epigenetics: How Nurture Shapes Nature

bioscience.oxfordjournals.org

We use cookies to enhance your experience on our website. By continuing to use o...See More

26 mins · Like

Monica Anderson Answer me this: How does sperm in a rat's testicles know what neurons in the brain that will code for fear to a flowery smell?

25 mins · Unlike · 1

Monica Anderson How do they know that's what they need to encode? How do they encode it (in what medium? DNA?) and how do they escape demethylation which happens at conception. How does the message passed imprint the brain of the offspring? How can they fit that information into the DNA + external load? How does the body even know *what* sensory expression is worth passing on to the offspring.

These questions just scratch the surface and I cannot conceive of any mechanism that could provide the reported result.

22 mins · Unlike · 2

Timothy John Tiedemann I think there's more evidence for the F1 but epigenetic changes pass from parents to offspring. <http://www.ncbi.nlm.nih.gov/pubmed/24158121>

Newborns of obese parents have altered DNA... [Int J Obes (Lond). 2013] - PubMed - NCBI

www.ncbi.nlm.nih.gov

PubMed comprises more than 23 million citations for biomedical literature from M...See More

18 mins · Like

Micah Blumberg "Answer me this: How does sperm in a rat's testicles"

I will answer.

This is a very old idea I came to hypothesize after studying LTP. I had this idea way before this study came along, so when it did come along I wasn't really surprised.

In order for a new long term potential memory to form, a new protein must be synthesized by a neuron, and this new protein permanently alters its physical structure, its mass, its energy dissipation requirements, how much energy it takes to cause its action potential to fire, and how much entropy it can tolerate before dissolution. Its new structure, the result of LTP, is a new genetic structure, a tiny change that can be transmitted when the creature self replicates.

If the offspring's genetic structure resembles the parent's genetic structure, then the memory in this case can simply be a gene based structural similarity between parent and child.

Neuroscientists today think there are many, perhaps between 5 and 8 or even more types of memory systems in the human brain, sort of evolving on top of one another.

So that's how this type of memory can be plausible, but also how it can be just one of several types of memory.

The new neuron structure may or may not result in the same memory, there is a chance it could result in the fear of a very different smell, I'm not sure what the odds are, and I think that's my point, no one knows what the odds are. The odds that the new neural structure, caused by new protein synthesis, caused by LTP, causes a new memory, and a new dna pattern that sperm can pass onto offspring, that causes grandchildren to fear smells their grandparents learned to fear, isn't impossible by any means, and if we knew the odds, which we don't, we might not scoff at the idea of it being an extraordinary claim, it might be pretty ordinary.

1 min · Like

a0530z

Note created Sep 19, 2012

(LTP, field, dendrite, synap, cereb, neuron)

Dean

Interesting idea, but unfortunately it doesn't bear any resemblance to what we know from neuroscience.

Connectivity within the brain generally follows a small-world network architecture, where the vast majority of connections between neurons are to neighboring neurons with connections to distance neurons far less frequent. This allows a great deal of information to be stored in a compact fashion and yet having no more than six degrees of separation between any two neurons. Each neuron only "knows" about the neurons it's currently connected to and responds to stimuli from them or sends stimuli to them, mostly, but not exclusively through spikes (action potentials).

If this scheme seems too simple to produce the complex behavior we observe, keep the following in mind:

There is a good deal of evidence to support the idea that synapses are the primary mechanism for storing memory, which is a requirement for computation. There are over 1,000 different proteins inside an average (human) synapse and these proteins combine in a vast number of ways to create post-synaptic receptors that can react in various ways to the release of a number of various neurotransmitters from the pre-synaptic vesicles. The combination of all of these separate parameters, all influenced not only by the pre-synaptic and post-synaptic neurons, but the surrounding sea of cerebrospinal fluid which is awash in various neurotransmitters, hormones and EM fields, allows a single synapse to have an enormous amount of

computational power. Combine this with the fact that a single neuron may connect with thousands (tens of thousands in some cases) of synapses you can get an idea of the computational power of a single neuron (there is also a great deal of computation that occurs within dendrites as well as within the neuron body itself). When you combine, on average, around 10,000 neurons into a single cortical column (think of it as a network within a node within a much larger network) you can get an idea of how powerful the computational capabilities are. SDRs are constructs used to represent large amounts of information in a compact form and they work well as long as the data itself is sparsely distributed (e.g. in the case of a bitstream, if the data is mostly 0's with occasional 1's). This is a good fix for Hawkins' HTM model. However, it does not (and it's not meant to) pattern itself after neuroscience.

Micah Blumberg

Synaptic connections are too volatile for LTP, long term memory, they might be good for short term memory, representations of say what you're seeing right now. Besides your argument is an argument for more than one kind of memory system, not a demonstration that Cloudy's model does not also work.

The neighboring architecture, and the representations of data/memory at the synaptic level are only part of the whole picture. None of what you're saying actually displaces my remarks which already include an understanding of the model of synaptic short term memory, and the hierarchical structure of communication.

Dean

Long term memory entails structural changes (synaptogenesis, formation of dendritic spines, dendritic arborization and in some cases neurogenesis), but these structural changes result from repeated enforcement from temporal spiking patterns produced from these synaptic representations.

The informational structure remains essentially the same, though it is stored in more persistent structures.

Micah Blumberg

"Long term memory entails structural changes (synaptogenesis, formation of dendritic spines, dendritic arborization and in some cases neurogenesis), but these structural changes result from repeated enforcement from temporal spiking patterns produced from these synaptic representations." This part is well said, still it is already part of the picture.

"The informational structure remains essentially the same, though it is stored in more persistent structures." If the information structure remained the same, then you would not make any new memories.

LTP also includes the formation of new protein, which moves to the nucleus of the Neuron, changing its shape, without the formation of the new protein the long term memory is not successful.

This new protein may result from activity in the synapse, particularly the Camkii2 interacting with the microtubule like a six bit hammer every time the synapse fires

a0531z

(LTP, neuralink) someone asked if Neuralink could recover memories from before the age of 4.

The answer is no, Neuralinks initial year one functionality is not designed to recover memories.

If you can't remember your life before the age of 4 how is a computer supposed to recognize and identify memories from that part of your timeline, assuming they are still in your brain somehow

Also are the memories of people between the ages of 0-4 in the same format as your memories now? or are they more abstract, weirder, and not really coherent to adults or to anyone even if you could pull them out of your head?

Long term memories or LTP (P for potentiation) involve new protein synthesis, and actual change in the structure of the brain that is part of how memories from a very long time ago can sometimes play themselves back in your memory. If babies between 0-4 even make long term memories we would be able to see the stages of LTP happening in their brains including the new protein synthesis that happens not only when memories are stored but also when they are recalled. (Recalling your old memories changes them a little each time) The goal would be to stimulate your brain in such a precise way as to trigger your brain to play back neural firing sequences that represent memories from the first 4 years of life.

However if long term potentiation does happen the brains of people between ages of 0-4 then it should be possible to recover those memories which brings us back to what I argued earlier which is will those memories even be coherent, with they make any sense? Will it be a lot of jumbled together nonsense? I don't know, or will we see clear photos of the people around them somehow extracted by neural networks and devices like neuralink.

a0532z

(LTP, neuron)

I think that if LTP memories are electro-chemical tempo-spatial rhythms based on protein calibrated axon potential discharges, then adult neurogenesis would either have to replace old memories OR the new neurons would have to be genetic replica's of expired neurons. Is it possible, does it happen? Is LTP transferred from old neurons to new neurons via dna?

a0533z

(neuralink, dopamine, neuron)

Links to what I'm reading <http://simp.ly/publish/cSDLQ3>

Sun Jul 25

2021

Reinforcement learning links spontaneous cortical dopamine impulses to reward

original

[https://www.cell.com/current-biology/fulltext/S0960-9822\(21\)00898-8?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982221008988%3Fshowall%3Dtrue](https://www.cell.com/current-biology/fulltext/S0960-9822(21)00898-8?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982221008988%3Fshowall%3Dtrue)

Non-contact long-range magnetic stimulation of mechansensitive ion channels in freely moving animals

original <https://doi.org/10.1038/s41563-020-00896-y>

Am I my connectome? Each human brain possesses a unique, intricate pattern of 86 billion neurons. If science can map it, immortality beckons

original

https://aeon.co/essays/mapping-the-brains-connective-structure-could-unlock-immortality?fbclid=IwAR2qIGVutZfBFgVaCZk9UQV4fo5UxJqjseb_NFZJMtfA9V3PWAfSSSOmTZ8

The Future of Brain Machine Interfaces - Shivon Zilis, Project Director at Neuralink | CUCAI

2021

https://youtu.be/CkUcCcRq_eM

Tags:

dendrite, neuro

a0534z

(neuralink, graph, neuron)

Great Science Fiction Stories about brain computer interfaces and artificial cognition.

Fiction about brain computer interfaces:

The Nexus Trilogy by Ramez Naam

Sword Art Online, a Japanese Anime

The Kiln People by David Brin

Neuromancer by William Gibson

The three stigmata of Palmer Eldrich by

I am a strange loop by Douglas Hofstadter

There is a little known book series called the Nexus Trilogy by Ramez Naam. They inject nano machines that attach themselves to neurons to create a two way wireless transmission of thoughts, feelings, and memories to other people who also have nexus.

Artificial telepathy.

There is an Japanese Anime series called Sword Art Online that has spin off series, and a movie that revolves around a bci technology they call nervegear, people put it on like a VR headset while they are sleeping and their minds are transported into a VR game sort of similar to the Matrix movie concept.

By implication SAO's nerve gear is non-invasive, I can imagine that could be like Laser-doppler holography tech combined with ultrasound, or Laser fNIRS with Holography (Openwater.cc).

While the Matrix Trilogy tech could be closer to Neuralink, in terms of brain surgery being required.

Also every bci enthusiast should know of this commercial for Playstation 9 that appeared in 1999 <https://m.youtube.com/watch?v=lyPQVsdCuRk>

Augma: Augmented Reality Nerve Gear

The Sword Art Online movie "Ordinal Scale" featured an update to nervegear called Augma https://en.m.wikipedia.org/wiki/Sword_Art_Online_The_Movie:_Ordinal_Scale

"Unlike its predecessors, the «NerveGear» and «AmuSphere», the Augma is capable of sending signals to the brain while the users are awake,[1] and is thus primarily used as an Augmented Reality"

"Sword Art Online's Nerve Gear was elaborated in Accel World as a precursor to the implants seen in Accel World." Accel World is another anime series that uses nervegear/augma to create augmented reality experiences through a brain computer interface.

One of the book series that helped inspire the science fiction movies series called The Matrix was the Sprawl Trilogy was including Neuromancer by William Gibson https://en.m.wikipedia.org/wiki/Sprawl_trilogy

Other books that were inspirations for the Matrix series included:

"Simulacra and Simulation" by Jean Baudrillard, "Out of Control" by Kevin Kelly, and "Introducing Evolutionary Psychology" by Dylan Evans.

a0535z

(neuralink) 2021 Shivan Zilis @ AI Conference: Neuralink update

https://youtu.be/CkUcCcRq_eM

Neura Pod - Neuralink

37.1K subscribers

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Published on Jul 23, 2021

Everything ALS Research: <https://www.everythingals.org/research>

2021 Shvon Zilis @ AI Conference: https://youtu.be/CkUcCcRq_eM?t=26

Kernel Company Spotlight link:

2021 Bryan Johnson x Lex Fridman: <https://youtu.be/1YbcB6b4A2U?t=5028>

2019 Bryan Johnson - A Plan for Humanity: <https://youtu.be/hdRNGnIWntw?t=402>

2021 Neuralink Team Lead Q&A w/ IEEE Spectrum: <https://spectrum.ieee.org/tech-talk/b...>

Dr. Joseph O'Doherty CV: http://neuroengineer.com/odoherty_cv.pdf

Neura Pod is a series covering topics related to Neuralink, Inc. Topics such as brain-machine interfaces, brain injuries, and artificial intelligence will be explored. Host Ryan Tanaka synthesizes information, shares opinions, and conducts interviews to easily learn about Neuralink and its future.

Most people aren't aware of what the company does, or how it does it. If you know other people who are curious about what Neuralink is doing, this is a nice summary episode to share. Tesla, SpaceX, and the Boring Company are going to have to get used to their newest sibling. Neuralink is going to change how humans think, act, learn, and share information.

Neura Pod:

- Twitter: <https://twitter.com/NeuraPod>
- Patreon: <https://www.patreon.com/neurapod>
- Medium: <https://neurapod.medium.com/>
- Spotify: <https://open.spotify.com/show/2hqdVrR...>
- Instagram: <https://www.instagram.com/NeuraPodcast>
- Facebook: <https://www.facebook.com/NeuraPod>
- TikTok: <https://www.tiktok.com/@neurapod>

a0539z

(super position, observer) Reality and your brain are updating simultaneously

but the observer effect or the measurement problem is analogous to measuring the up or down spin of an electron with a magnet

because when you observe you are collapse the position of the electron in that moment to an up or a down state

but also a magnet is doing that because before the electron is up or down in the magnet it might be in super position

so the observer effect means that your brain is like a magnet, and that the observed and the observation are one thing, that they are being co-created simultaneously by the universe. reality exists as soon as you see it, as soon as you are aware of it.

a0541z

Jul 20, 2012

(synap) "why does no one ever like examining us left-handed folk? :(" everyone's brain is slightly different, but in large percentage of left handed folks the brain is so significantly different that it drowns out meaningful personality distinctions in the data. In comparing the data from the brains of all right handed people, it's easier to compare one brainmap to another.

10 minutes ago · Like · 1

Paymon Cameron Jalali Do we have to worry about any radiation used to examine our brains? Any monetary compensation?

9 minutes ago · Like

Micah Blumberg I think of preference as a persistent modal strategy, and personality as a strategy that has been identified with through many cycles of synaptic connections (sequence memory) representing self. It means different brains take different strategic paths, and then identify with those paths formulating a social contract called your personality that reinforces the distinction of your path.

6 minutes ago · Like

Nida Siddiqui Thanks for the explanation, Micah :)

5 minutes ago · Unlike · 1

Nida Siddiqui just read the later post, Micah. You know your stuff!

4 minutes ago · Unlike · 1

Micah Blumberg "Do we have to worry about any radiation used to examine our brains? Any monetary compensation?" EEG brain mapping is like a microphone that listens to the electromagnetic sound that comes out of your skull, it doesn't emit radiation or effect your brain in any way.

4 minutes ago · Like · 1 b

Micah Blumberg Thanks Nida, I'm a brain researcher from San Francisco who uses EEG and Brainwave Entrainment to teach people to recognize their brainwaves and control their inner state in a more consciously coordinated way. Rapidly expanding self awareness, and optimizing brain activity. Uniting different regions of your mind involved in feeling, seeing, hearing, and big picture prediction.

Tags:

brainwaves

a0543z

Note created May 8, 2017, it looks like a pitch for my the Neural Lace Podcast that you can find on <http://vrma.io>

(synap)

UPDATE: Why Neural Lace is relevant to the Network Society Project

Neural Lace as a technology, and as a direction of research is about where the simultaneous exponential growth of technologies is headed and it will have a massive social impact. My podcast is not only about these technologies but it is about democratizing them. This podcast is a vision of the unstoppable change of technology so that individuals, enterprises, and society at large can deal with what is coming.

Neural lace will mean new things for justice when for example law enforcement can request that a judge grant a warrant to search the a suspects mind to find out whether or not a crime was committed, and to locate additional evidence of that crime.

Neural Lace will allow individuals to upload, download, and simultaneously experience the experiences that humans are having.

Neural Lace and the related technologies leading to neural lace will allow the tools that we use, like computers, phones, ar and vr headsets to predict what we want to create, or access, or achieve faster and better than ever before. This category of tech will make our user interfaces more intuitive, more intelligent, and more useful.

Neural Lace and related tech will make our world a more collaborative place, and a happier place, because it will enable the collection and transfer of useful actionable information at an even faster rate.

Neural Lace is not only about the networks of the mind, but it is fundamentally also about the networks of society.

////////////////////

Have you ever wondered how Neural lace might work? I have some amazing guests talking about it on my podcast, give it a listen if you have time today.

In the 4th episode of the Neural Lace Podcast, I talk to Andre Watson, the CEO of Ligandal, a genetic nano-medicine company developing personalized gene therapies.

goo.gl/cgCNwX

Watson and I take a deeper dive into the synapse physiology and molecular biological basis of consciousness.

How much do we really need to understand and observe to effectively create neural lace? Andre presents his argument for the biological basis of consciousness.

a0546z

May 11, 2019

(tomography, semantic)

In general the NeurotechX group of San Francisco has its focus divided between a few different key topics which are all in some sense related to the research and development of neurotechnology.:

medical imaging technologies including BCI and BMI, and software development around brain computer interfaces including spatial computing like WebXR, and also Deep Learning.

This year 2019 we have pledged to spend more time studying Deep Learning on 3D Point Clouds

The goal is to study how to do semantic segmentation or object segmentation on 3D data such as point clouds, voxels, meshes etc that might be collected with lidar, RGBd cameras, fMRI machines, FNIRS functional near infrared spectroscopy, openwater (Mary Lou Jepsen's technology), EIT (electrical impedance tomography, or new highly spatial EEG (reference: <https://www.techexplorist.com/gentle-method-unlock-mysteries-deep-brain/21231/?fbclid=IwAR3HPPRuBUUc617f9MxIV9NHB6HJ-f3k9WntYhmkHQfFKU3fi7ZUw8YMPTg>)

Applications: In short semantic segmentation of 3D data allows (for example) a vehicle to identify objects in the environment and separate out which pixels belong to that object and which do not. Object segmentation has been used to make advanced neural correlations in fruit flies to fruit fly behavior captured with a high speed camera.

https://www.hhmi.org/news/artificial-intelligence-helps-build-brain-atlas-fly-behavior?fbclid=IwAR0ectGUfE9vgWp4gac1H-UyYCWeG9h2Q737M52I0_lqyC2SEclKH7gtws

Other applications can include recognizing spaces, planes, edges, and objects for augmented reality and virtual reality applications, such as the ability to re-skin the couch in your space so that it appears as a wall in VR.

In January of 2019 we were inspired by a talk given by Or Litany <https://orlitany.github.io/> to shift our focus onto deep learning in a significant way. Previously our group met to work on connected EEG to VR via an implementation that involved this group learning how to develop WebXR with AFRAME, three.js, and pipe the EEG signals to the webpage via a web-socket, needless to say we were successful and now we are changing our focus to accomplish something bigger.

We meet to discuss ideas related to neuroscience, brain computer interfaces, deep learning, software development, and more.

This group is interested in Pointnet <http://stanford.edu/~rqi/pointnet/> and in 3D cross hair convolutional neural networks
<https://medium.com/silicon-valley-global-news/3d-cross-hair-convolutional-neural-networks-5d39e2b565ca>

Previous examples of our work with EEG and VR:
<https://photos.app.goo.gl/5XsrPcEeVdUmVt9t6>

Here is older video of the Neurohaxor WebXR, EEG, FFT, Scatterplot/spectrogram project running in WebVR from 10.25.2018
<https://www.facebok.com/worksalt/videos/2467372666622699/>

This was our original event description for Neurohaxor code nights
<https://medium.com/silicon-valley-global-news/neurotechsf-sf-vr-360-noisebridge-91a34d788a5d>

The story so far:
<https://medium.com/silicon-valley-global-news/noisebridge-went-to-the-maker-faire-in-this-article-you-will-learn-about-ngalac-the-93f4857d3014>

Watch the Neural Lace Podcast Season 2 Episode 1 NeuroTechX and OpenEIT
<https://youtu.be/aexQwTpOwYc> with Jean Rintoul to get the big picture vision of what we want to accomplish.

Also watch the Neural Lace Podcast S2 E2 with Jules Urbach <https://youtu.be/yMsaNsQzjFQ>

Previously: We made significant progress at the July 29th, 2018 meetup: We were able to cause voltages from the skin to move objects in WebVR.
<https://www.facebok.com/worksalt/videos/2332211350138832/>

Other links including the Github and our online groups:
<https://medium.com/@vrma/list-of-links-from-neurotech-sf-vr-on-8-31-2018-7a80cfd3901b>

a0547z

Jan 4, 2014

(vector, criteria, waves)

I am the distributed summary of criteria tempo-spatial waves in some vector.

the same informational content bubbles up over and over again in varying cycles, sometimes re-written, sometime re-shared
<http://www.kurzweilai.net/turning-off-the-aging-genes>

things I was reading about a year or more ago are finally making their way into broader awareness

<http://www.jci.org/articles/view/63146>

You all know I've been studying neuroscience and reading about artificial intelligence for almost ten years now. I've been studying some really far out concepts. I was reading a book when all of a sudden I had an

M

a0551z

Cycle 1/3 of Cycle 1 The path of signals

spectrometer

radiometer

ocean optics

One of the key mathematicians/physicists for my book shares one of my hobbies, but he wasn't the only one, so while looking for references that talked about his hobby, I found another guy who shares the same hobby, and he created information theory.

A formula for how time increases dimensions at the quantum scale

in other words

a masstime equation for particles

the idea is that mass is pinching time at the quantum scale
the arc of the oscillating of mass is shorter

I'm trying to argue that there are more intervals of space when there are fewer intervals of time

the question is about how to describe how time is increasing space from a particles perspective, and thus changing the direction that mass moves in on average, changing the shape of space

I need to measure quantities of time as vectors in higher dimensional space

models of the mind

a human being is abc

a man is abc+d

a fractal functional isomorphism in category theory is like the set of abc is inside object a, object b and object, but

mass space is extra

slowing intervals of space & time over time by increasing the surface area of spacetime at the same time

I want to for example predict with the equation for quantum gravity the mode of tau particle decay

and to shown why the mass of gluons does not add up to the mass of the proton

kinetic energy pushes intervals of time into the future, slowing down time in the 3rd dimension because vectors of space are being pushed into expanding intervals of time

so time as we experience it in time dilated space as time dilated space seems to move faster in the sky and slower in the earth

the synaptic connection state is represented in the oscillation state which represents the item when it's being predicted tonically to represent the expectation net that receives the incoming phasic.

the attractor state representing the item and/or the color red on the item is oscillating in memory with a neural circuit firing pattern, but other signals from other items and colors threat to disrupt and or change that item in memory, perhaps changing its color for example.

fear is the angular momentum to the kinetic energy of frustration as both lead to anger

the tagline for the AI beholder book

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the tagline for the AI beholder book

You don't get web3 because 1. you don't need money outside the central banking system? 2. you don't need digital assets? 3. you think the dollar will always retain its value? 4. you haven't noticed the rise of rightwing_fascists in every country (they will take physical property)

I had a dream that I was living in an infected world with alien parasites taking over human bodies, and human minds, but what made it interesting to me was that the parasite infected were not smarter or dumber than regular humans.

They acted like normal people up until an infected person was in close proximity to an uninfected person. Then it was about biting you to spread the infection, but otherwise like terminators they could pretend to be people to get close to you.

a0552z

Jul 13, 2017

(cortex, graph, morphism, vector, semantic, neuron, category, theory)

1130 stopping cigarette addiction isn't logic, or reason, it's intuition, meaning a new connection pattern between rewards, consequences, behaviors, and inhibitions

It appears that intelligence, in a brain, is a pre-logical process. Apparently pre-logical brains can learn to use and understand the tools of logic, and reason, via a process that itself remains pre-logical, and irrational.

Might intelligence be a pre-logical process of pattern learning and pattern expression via path linking?

It occurs to me now that humans may only mimic the appearance of what they believe is rational, reasonable, and logical behavior. Intelligence might be pre-logical path linking, ie pattern matching, pattern learning, and chemical driven pattern expression. This same simple intelligence may be that which utilizes the tools of reason (including but not limited to philosophical argument, logic, mathematics, thought experiments, physics, all the sciences, all the tools of the reductionist paradigm, etc...), as learned patterns (referencing the aforementioned tools of reason) that may be likened to learned paths. Paths like neural pathways, or complex paths in the forest, that lead to results. Results such as fruits, rewards, money. Perhaps even the greatest minds ever recognized in history have been manifestations of this pre-logical, pre-rational, pattern learning and pattern expression process, ie electro-chemical driven path linking.

Pre-logical path linking means that everything we sense becomes a link between points, those points might be fired neurons. A pattern that is captured by a neuron higher up that fires when that pattern fires (because they are sending a charge it's way.) When two patterns are in the same room together, they create a second tier pattern, meaning now two neurons higher up have fired. These two neurons now represent a combination of the two patterns learned lower down. In this way all the patterns in the world, from all the objects, notions, sounds, horizons, pictures, get linked together into super patterns cascading up neural hierarchies. This includes learning patterns that cause coordinated muscle movements. They get linked with patterns that cause chemical changes, meaning rewards and other consequences. So muscle movements get linked via neural node patterns to chemical driven needs. When a chemical need says "I'm expecting more nicotine" it triggers complex thought and motor behavior to get a cigarette. Connecting the nicotine need with consequences may connect with an inhibiting pattern that prevents the thinking and motor path that gets cigarettes from happening. Stopping the cigarette habit was not a logical or rational choice, it was intuition, meaning it was simply a new connection pattern that drove improved behavior.

A non-logical new connection links chemical driven incentives with rewards & consequences, and more intelligent behavior results. This behavior is apparently better neural path finding.

After you read this paragraph, fix your attention on any point for a moment, and imagine that what your looking DIRECTLY at is creating a wave of cells that are lighting up because the external stimulus, and what your NOT looking directly at is created inside your brain, internally, from cells that are getting ready to fire, because you might turn your head. Then imagine as you reach for a door handle today, that before you touch that door or door handle, there is an expectation as to what it is going to feel like, and that expectation is made by cells that are getting ready to fire, just in case you do touch that door.

James Nakos Actually I've thought of this many times... It's pretty exciting to know/realize!
Yesterday at 9:37am · Unlike · 1

Micah Blumberg

After you read this look at any two objects, and imagine that the vector space between them is represented by cells expecting to fire.

Micah Blumberg

Imagine that when cells fire, or go into a ready state, they represent points in linear algebra equation, or an xyz graph or more simply points you can relate to as having a distance from you, and a distance from other points. Except that the points your receiving are only tiny bits of the picture you think your seeing.

Imagine that a wave of these points is only a small part of what you think your seeing, because the rest of what you think your seeing is coming from cells in a ready state. They are in a ready state contributing to what you think you see, because they are like dog trained to be associated with the points that are firing.

Yesterday at 10:04am · Like

Micah Blumberg

Imagine that with each 1/1000th of a second. Your getting a different wave of different points, cells that represent vectors, planes, colors, details, reflections, sounds in this xyz graph space.

Yesterday at 10:18am · Edited · Like

Micah Blumberg

Imagine that what can seem like a whole picture and a whole experience of reality is at the same time actually brainwaves of vectors represented by bits (fired cells), bits that represent pieces of the whole experience, not all at once, but in a fast sequence, bits that create the impression of vectors, planes, details etc.. Tiny pieces of the picture that comes so fast it seems like one holistic and smooth experience. In one second the detail your directly noticing is what is firing, and the details you are not directly noticing have either recently fired, or are in a ready state getting ready to fire, but so much has fired so quickly that the complexity of detail in your experiences seems rich.

Yesterday at 10:46am · Edited · Like

Micah Blumberg

Imagine that some people look at a brainwave, and they say this isn't a picture of anything, so they claim that there are no pictures in the brain, well that's kinda wrong.

Imagine that pictures are accomplished as vectors between fired cells, and ready cells (from other recently fired cell) These are not like jpg pictures, but you can imagine them as a sort of four dimensional projector where the screen is the projector, and the projector is the screen, and the viewer is both screen and projector.

Yesterday at 10:39am · Edited · Like

Micah Blumberg

Imagine this viewer (who is both the projector and the screen) is the structure of the cells that are either firing, or in a ready state from other nearby cells that have already fired.

So imagine that the viewer is all the cells, and what appears to the viewer are visible and invisible vectors, spatial and temporal relationships, created by both cells that are firing, and cells that are ready to fire from other cells that have fired.

Yesterday at 10:42am · Like · 1

Micah Blumberg

After you read this fixate on any point in your field of vision, and think the spatial meaning of this point is it's distance from me (vector), and it's distance from other points (more vectors). So meaning is like the vectors between associated points. It's tempo-spatial meaning can include vectors that point to it's density, it's volume, it's texture, it's temperature, it's history, any associated words, or concepts, and each of those things are represented as vectors between cells in other areas of the brain, they get ready to fire because they are linked to what has fired, and what has fired is what you have focused on.

Yesterday at 11:01am · Edited · Like

Micah Blumberg

So if a cell is a node in the mindmap, imagine that the meaning isn't in the node, it's between the nodes.

Yesterday at 11:05am · Like · 1

Betsy Troxler · Friends with Mark Andrews

haha is that like connecting the dots? I can't keep up with you guys on this one...I use the right brain most of the time...do the nodes drift? heehee

5 hours ago · Unlike · 1

Micah Blumberg

Hey Betsy, imagine that the dots that light up are what is inside consciousness, and the dots getting ready to light up are the subconscious, and the dots that are not lit up are unconscious. The light drifts (meaning that the nodes that light up create patterns that look like waves moving through the brain)

3 hours ago · Like

Just imagine that when you see something, this is happening in your brain. Imagine that your having waves of sight pass through your brain tissue. Flowing in almost like water with special properties <http://medicalxpress.com/news/2012-10-fetal-neural-vision.html>

the morphism (arrow symbol) could describe the path or sequence in which these links appear in cognition, like the path of a brainwave through cortical columns could be described as a wave of morphisms (arrows)

does your system allow links to jump through space to a node that isn't attached as might happen in a brain?

I suspect that the ability to reason and think rationally may actually describe the pinnacle of non-rational intuition. Meaning that reason itself maybe the non-rational recognition of higher order sequences of variable prediction patterns in the highest levels of the neo cortex. Where sequences of tokens of meaning (in any sensory modality, as a notion, shape, space, picture, word) are ordered and re-ordered, added or otherwise computed, (through dialog, in journals, via meditation, brainstorming, or put through reasoning tools via math, or formal logic, or computer simulations) and then the value, which is the result of this "reasoning process", or logical computation is something that is received into memory by the highest levels of a reasonable person's memory. Which even in the most evolved human may be actually a non-rational intuition system. Non-rational even at the highest levels, even at the peak state of consciousness in its most refined form. Maybe a human is considered to be rational and or to have good reasoning abilities based on some demonstration of results that are non-rationally perceived as good results. Meaning merely associated. Essentially I am saying that advanced pattern matching (that is pre-logic) may be intuitively learning and engaging in logical processes, that are understood and recognized as logical processes, by a system that is only capable of pattern matching. I say that reasoning and logic are like tools, behaviors, songs, and software. Our brains seeming to be intuitively capable of using them, or engaging with them, but maybe its somewhat of an illusion that people can be actually rational. Maybe we can say that some people have acquired more rational thinking, and or more rational behavior patterns. Reasoning and rationality maybe a superficial process, hiding a system that can be neither in its core functioning.

When I found out that neurons inhibit nearby neurons when they fire I thought, here is the secret of intuition

There are chemical signals that come from your body that can shut down your rational thinking, and make you fall sleep for instance. Rational thinking is apparently a guest inside a chemical system that isn't rational, maybe it's a tool of intelligence, but not part of intelligence.

Is a semantic token the meaning of a word?

Is a semantic token a map of vectors between points above a certain threshold in various nodes?

Is a semantic token like a matrix, that can be understood as a spatial metaphor, or a description in category theory that defines or remembers a relationship between vectors that emerge in space?

Thursday

Micah Blumberg

Is model free intelligence about creating a model based on whatever emerges beyond the thresholds that filter significant patterns from noise?

I'm getting a new sense of the inner geometry of my mind.
and the geometry of my thoughts

Micah Blumberg

See this video <http://medicalxpress.com/news/2012-10-fetal-neural-vision.html> this does not look like single character bits fed one at a time triggering points converted into vector mapped based memories. it looks like a morphing vector pattern being going through several stages of memory reduction in the architecture. Essentially because the burst runs out of steam, and then it leaves its vector mapped imprint. A spatial representation imprinted in the fired connections.

Burst of fetal neural activity necessary for vision

medicalxpress.com

(Medical Xpress)—A sudden and mysterious burst of activity originating in the retina of a developing fetus spurs brain connections that are essential to development of finely-tuned sight, Yale researchers report in the journal Nature. Interference with this spontaneous wave of activity could play

I immediately think of category theory as a holistic counterpart to set theory.

Category theory is math, so it's on the side of reductionist, but...

it maybe a way to model holistic components, and holistic structure that accumulate in the emergence of a model free intelligence

I'm a model free intelligence, how interesting.

Is this a form of primal intuition? The slime mold just doesn't search where it has searched before. So it's own slime serves as a memory, and can we describe this behavior as intuition? fyi my apologies if I have misunderstood AN I just started reading your website about Artificial Intuition today and I am extremely fascinated!

<http://blogs.discovermagazine.com/notrocketscience/2012/10/08/brainless-creature-solves-problems-with-memories-of-slime/>

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 you 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 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."

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 high bandwidth 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 $\frac{1}{2}$ 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 brain scans. 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 binaural 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 brain cells.

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 Dymerecs
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 Dymerecs
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 Dymerecs
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 Dymereys 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 Dymereys 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 Dymereys 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 Dymereys

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 Dymereys

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

Aristotles 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 Dymerecs

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 Dymerecs

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 Dymerecs

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 Dymerecs

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 Dymerecs

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

Rostyslav Dymerecs

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 Dymerecs

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 $\Delta E = E_{in} - E_{out}$? 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 Dymere

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 Dymere

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 its a vortex, whatever it consumes effects it's 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, its 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 Dymere

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 called 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 realizes 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