

The universe

Spiritual element to it?

Exploratory Jottings by Jed Anderson

Warning: If your intellect breaks easy, do not keep reading.

These jottings I think are best read by 8-year-olds. 😊 8-year-olds well versed in quantum physics and information theory. 😊

Child-like intellectual curiosity.

Suggestion: If you decide to continue reading, before you do, think back to a moment when you were a young girl or boy and a memory of deep imagination and curiosity you experienced—and how magical the world was in that moment in time. Then put on that incredible adult brain of yours, with all its knowledge, expertise, and experience—and start reading. And as my Mom always said, “take what you want and leave the rest.”

Universe functioning in part as a:

Spiritual “training program”???

Spiritual “simulator”???

Is it possible that there might be some element to the universe that is performing essentially as a training program for eternal beings???

- 1. How might the universe work in terms of information theory and spirituality?** Might this in some sense be a spiritual “computer” or “simulation” for developing eternal beings?
- 2. Where are humans headed?** Are humans headed into the greatest years of spiritual development as it becomes less and less our brains and brawn that uniquely define us and give us special meaning and purpose?
- 3. How might we protect and create space for additional human spiritual growth in the continued evolution of humanity?**

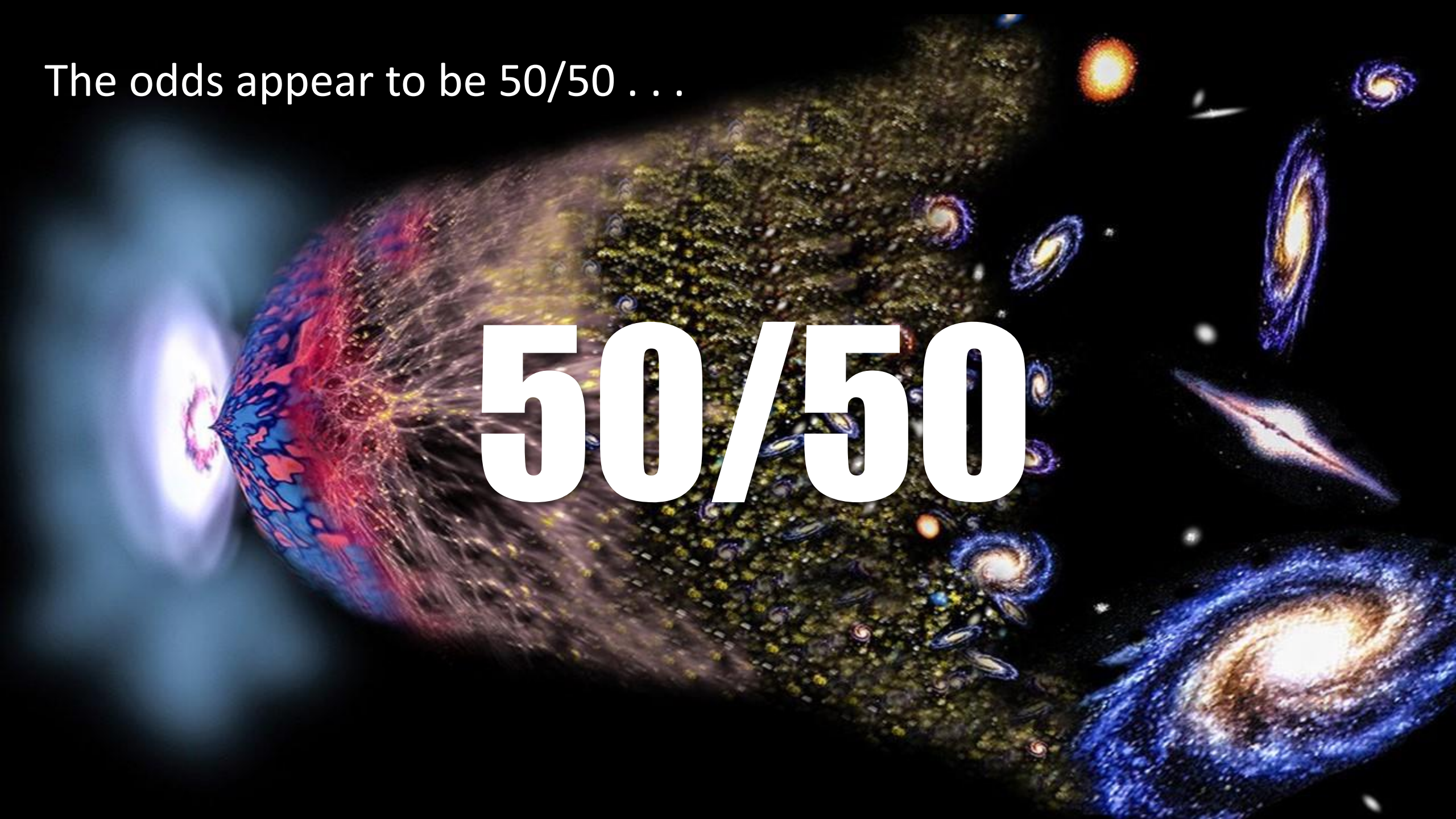
1. How might the universe work in terms of information and spirituality?



Is this a **“Computer”** or
“Simulation”?

The odds appear to be 50/50 . . .

50/50



Is this akin to a
“computer” or
“simulation”?

Nick Bostrom,
Oxford University

ARE YOU LIVING IN A COMPUTER SIMULATION?

BY NICK BOSTROM

[Published in *Philosophical Quarterly* (2003) Vol. 53, No. 211, pp. 243-255. (First version: 2001)]

This paper argues that *at least one* of the following propositions is true:

- (1) the human species is very likely to go extinct before reaching a “posthuman” stage;
- (2) any posthuman civilization is extremely unlikely to run a significant number of simulations of their evolutionary history (or variations thereof);
- (3) we are almost certainly living in a computer simulation.

It follows that the belief that there is a significant chance that we will one day become posthumans who run ancestor-simulations is false, unless we are currently living in a simulation. A number of other consequences of this result are also discussed.

I. INTRODUCTION

Many works of science fiction as well as some forecasts by serious technologists and futurologists predict that enormous amounts of computing power will be available in the future. Let us suppose for a moment that these predictions are correct. One thing that later generations might do with their super-powerful computers is run detailed simulations of their forebears or of people like their forebears. Because their computers would be so powerful, they could run a great many such simulations. Suppose that these simulated people are conscious (as they would be if the simulations were sufficiently fine-grained and if a certain quite widely accepted position in the philosophy of mind is correct). Then it could be the case that the vast majority of minds like ours do not belong to the original race but rather to people simulated by the advanced descendants of an original race. It is then possible to argue that, if this were the case, we would be rational to think that we are likely among the simulated minds rather than among the original biological ones. Therefore, if we don't think that we are currently living in a computer simulation, we are not entitled to believe that we will have descendants who will run lots of such simulations of their forebears. That is the basic idea. The rest of this paper will spell it out more carefully.

Reality is Reality!

CAUTION: Sometimes when physicists, mathematicians, and information scientists tell people that it's looking like the universe might in some sense be akin to a computer or simulation they get all weird. I think they start thinking of a digital computer or the Matrix or something. They start potentially thinking they are not living in reality. **YOU ARE LIVING IN REALITY.** Do not be what I call a "reality weirdo". Reality is reality. Reality just might be weirder again than what we've been thinking. People used to think it was weird when scientists told them that the world was round because if you look around you the world looks flat. Don't be weird. Or feel weird. You are not weird. Whatever it is . . . it's just weird.

Again, reality is reality. Do not be a "reality weirdo". It just might be a bit weirder than what we've historically been thinking. Embrace the strangeness. Think. Dream. Explore.

“It’s very likely that the universe is a simulation.”

- Neils Degrasse Tyson

“There’s a billion to one chance
we’re living in base reality.” – Elon
Musk

“Quite frankly if we are not living in a simulation
it is an -extraordinarily unlikely circumstance.” -
Rich Terrile, Nasa's Jet Propulsion Laboratory

“In a certain peculiar sense, the world is a
hologram.” – Leonard Suskind

“Either we’re going to create simulations
that are indistinguishable from reality or
civilization will cease to exist, those are the
two options.” – Elon Musk

“It is possible to build a virtual-reality
generator whose repertoire includes
every possible environment.” -David
Deutsch

“There is a high probability that we are
already living in a simulated reality.” –
Nick Bostrom

“Is the universe holographic? Probably.
Get microscopic enough and you start
seeing pixels.” - Steven Erikson



[Can we ourselves simulate the universe? This image is an image of a 2021 computer simulation of the universe. It's the largest simulation to date. It covers 2.1 trillion particles and is over 9.6 billion light-years in length. The simulation took 40,000 processor cores and 20 million computer hours to generate.]

10^{90}

Bits of information in the universe

[This includes human-generated information]

10^{45}

Bits of human-generated
information [So far]

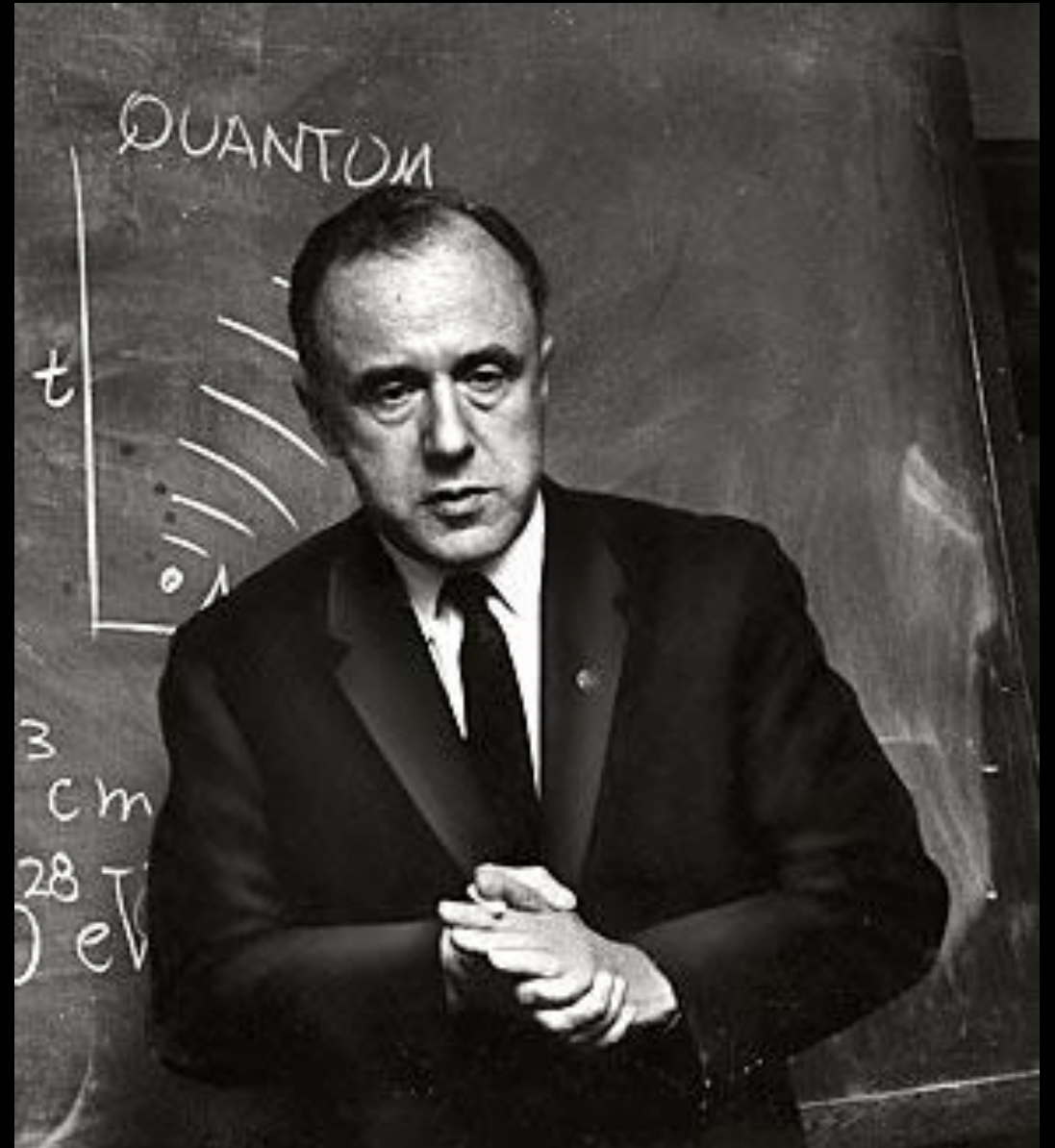
10^{21}

Bits of human-generated
information GPT-3 was trained on

“If and when we learn how to combine bits in fantastically large numbers to obtain what we call existence, we will know better what we mean both by bit and by existence.”

-John Wheeler

Princeton University



The continual iconoclastic evolution in our cosmological understanding . . .

1. Our Earth is round not flat (this notion of a round earth is contrary to intuition and most of our everyday experience . . . half of us on this earth are hanging upside down) - **500 B.C.** (Pythagorus) [Eratosthenes calculated circumference in **240 B.C.** and of course Columbus didn't sail off the edge of the earth when he tried it almost 2000 years later]

2. Our Earth isn't the center of the universe [earth rotates around the sun] - **240 B.C.** (Aristarchus) [Calculations by Copernicus in 1532 and astronomical observations by Galileo in **1632**]

3. Our sun isn't the center of the universe [stars are other suns] - **450 B.C.** (Anaxagoras) [Bruno in **1584** and then Angelo Secchi proved through spectroscopy in **1860**]

4. Our galaxy isn't the center of the universe - **964** (Azophi) [Later Kant, Messier, Shapley, and finally Edwin Hubble . . . **January 1, 1925** "*The day we discovered the universe*"]

5. Our universe isn't the center of the Universe - **_____?**

PHYSICS

1. Aristotelian Physics (345 BC)

- Universe is made of 5 elements: earth, air, fire, water, and aether.
- Objects have natural motions: those of earth and water tend to fall; those of air and fire, to rise.

2. Galilean Physics (1592)

- Galileo determines first laws of motion by experimentation
- Develops the concepts of: velocity, force, and inertia
- natural state of motion is uniform motion or rest
- objects fall at same rate regardless of mass

3. Keplerian Physics (1609)

- Kepler produces first kinematic description of orbits
- Each object moves in an elliptical orbit

4. Newtonian Physics ("Classical Physics") (1687)

- Newton provides dynamical description of universe, using:
- acceleration
- momentum
- conservation laws
- Everything essentially on an xyz axis in space-time

5. Quantum Physics ("Modern Physics") (1931)

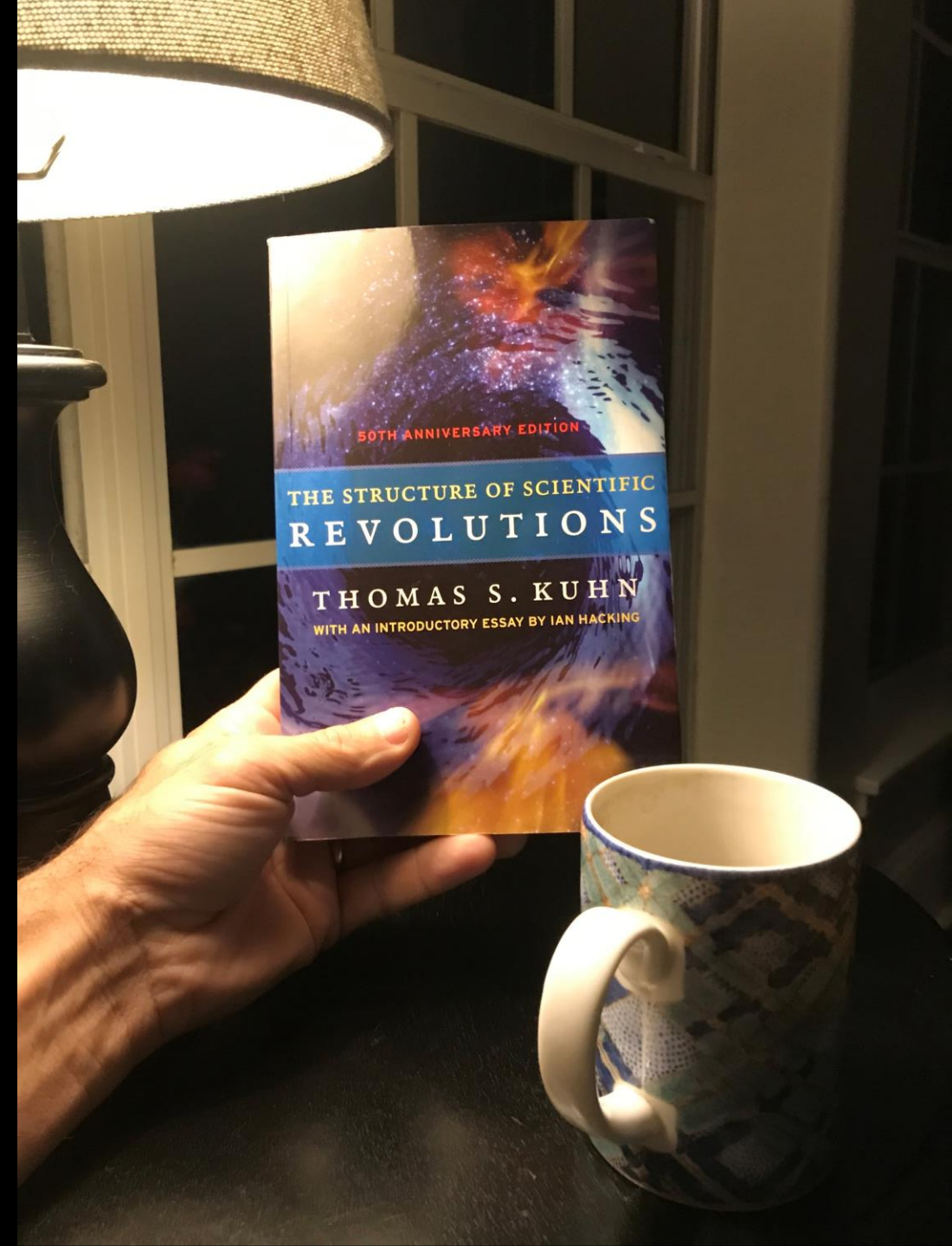
- Particles are waves and vice-versa
- Probability is all we ever know
- Measurement determines reality
- It's information in the form of a probability wave function
- Everything is probabilities

6. "Post-Modern" Physics (____?)



Time

This is probably one of
the most famous books
in all of science.

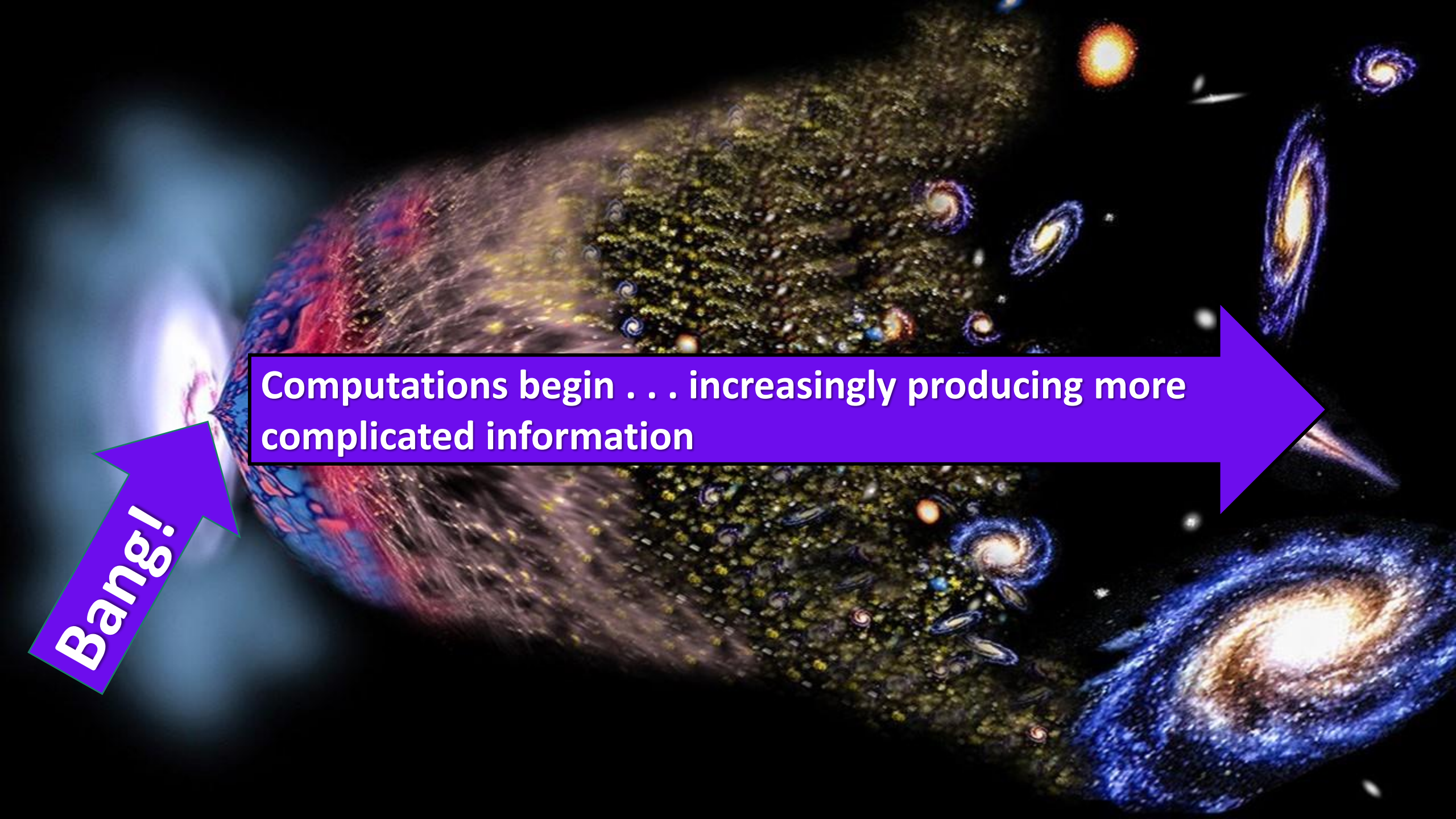


Is this universe we are living in a simulation or computer?



---"If it looks like a duck, swims like a duck, and quacks like a duck . . . then its not necessarily a duck . . . but the odds have gone up considerably now that it also might like crackers."

- Jed Anderson



Computations begin . . . increasingly producing more complicated information

Bang!

If the universe is a “simulation” or computer ... what’s the purpose of running it? ... And does this signify that there is something potentially beyond information?





What's potentially beyond information?

The reason I ask this question is threefold:

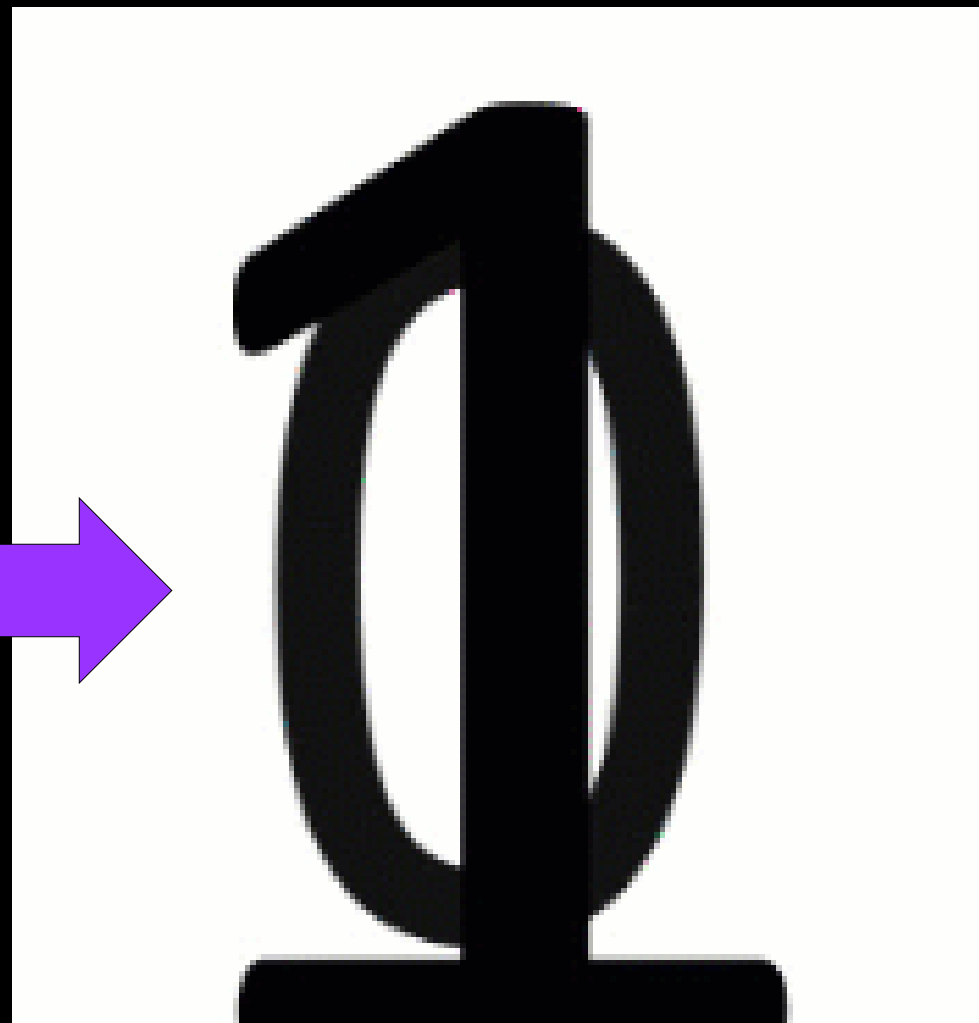
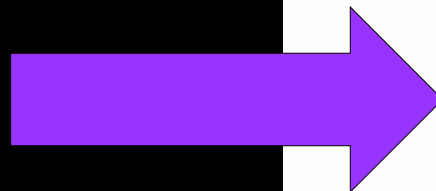
1. We've never hit the foundation in our cosmological understanding. Ever. If we think information is now the bottom, history would say "probably not"
2. It makes the current stage in our cosmological understanding of nature . . . information . . . more accepted as "no big deal" mainstream (if not perhaps putting it on a glidepath to antiquity as earlier stages in scientific understanding)
3. Sets the stage for pursuing the next evolution in the scientific revolution of our cosmological understanding

Is it a

WAVE?



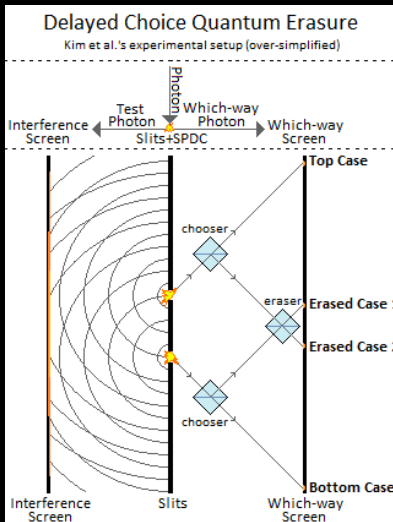
**What's
potentially
beyond
this?**



The Participatory Universe?

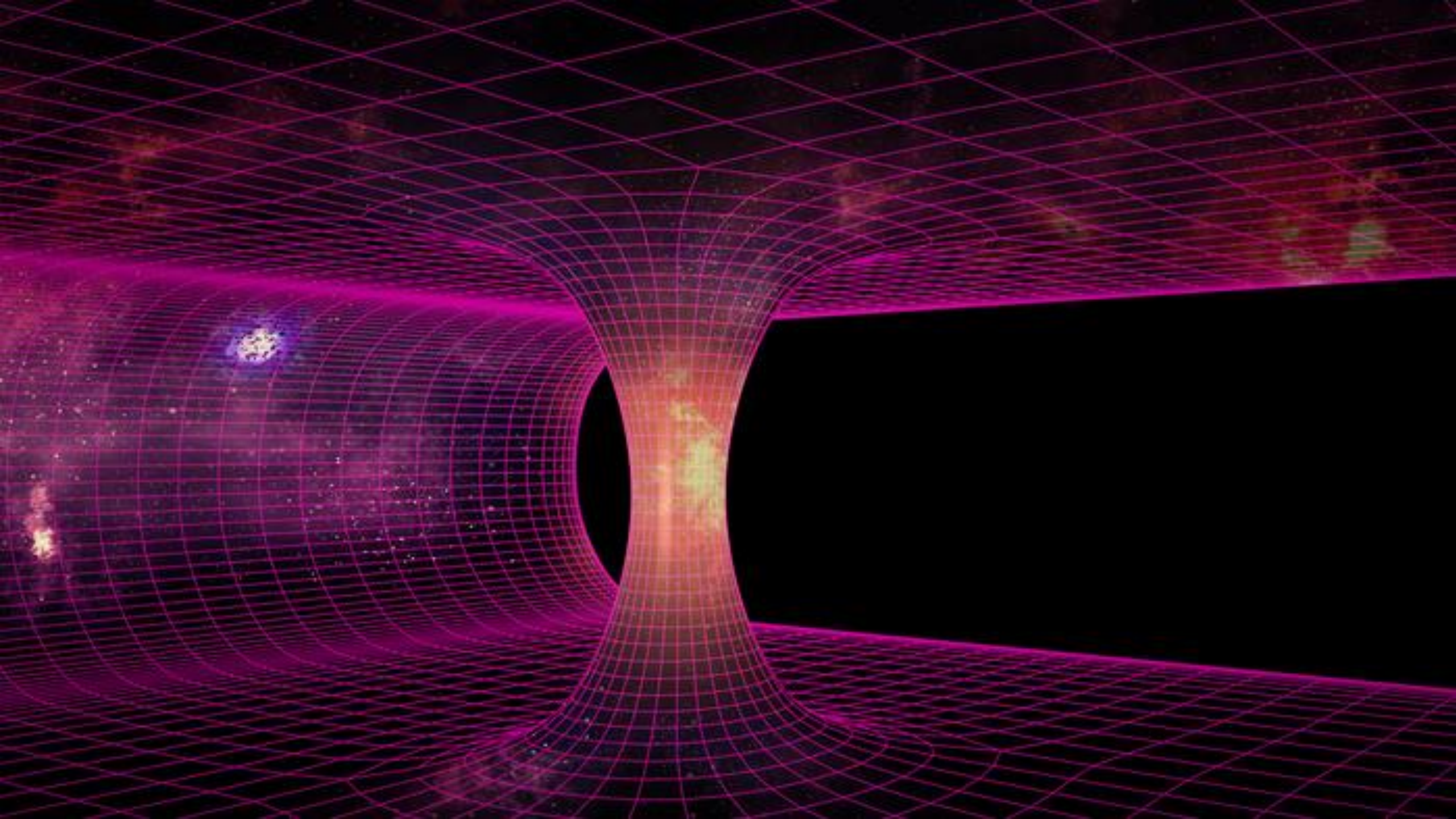
John Wheeler, Princeton University

“The observer, who was brought into existence by the universe, has, by his acts of observation, a part in bringing that universe itself into being.” – John Wheeler





**“The continual
iconoclastic
evolution in our
cosmological
understanding . . .**





Spiritual Simulator?

**“If it is a simulation . . .
perhaps it’s more
specifically a spiritual
simulation?”**

Spiritual “Simulation”?

1. If it is a simulation . . . then there is also a possibility its more specifically a “spiritual simulator” (i.e. “Flesh counts for nothing.”)
2. Purpose of simulation: Developing eternal beings?
3. **God enters the simulation . . . Christ (?)**: The beings in the simulation perhaps needed help at some point. Got stuck. God “pushed a button” for lack of an analogy that comes even close to potentially describing the ease with which God might majestically and powerfully operate in the world—sending Jesus into the “simulation” and thereby entering it Himself.

????????????

???

**IF WE'RE LIVING IN A
SIMULATION
I WANT TO TALK TO THE
MANAGER**

“If we are living in a simulation, then it’s almost an indicia of proof that there must be some form of a direct communication link, and we can indeed ‘talk to the manager’.”

- Jed Anderson



**Direct
Communication
Link?**

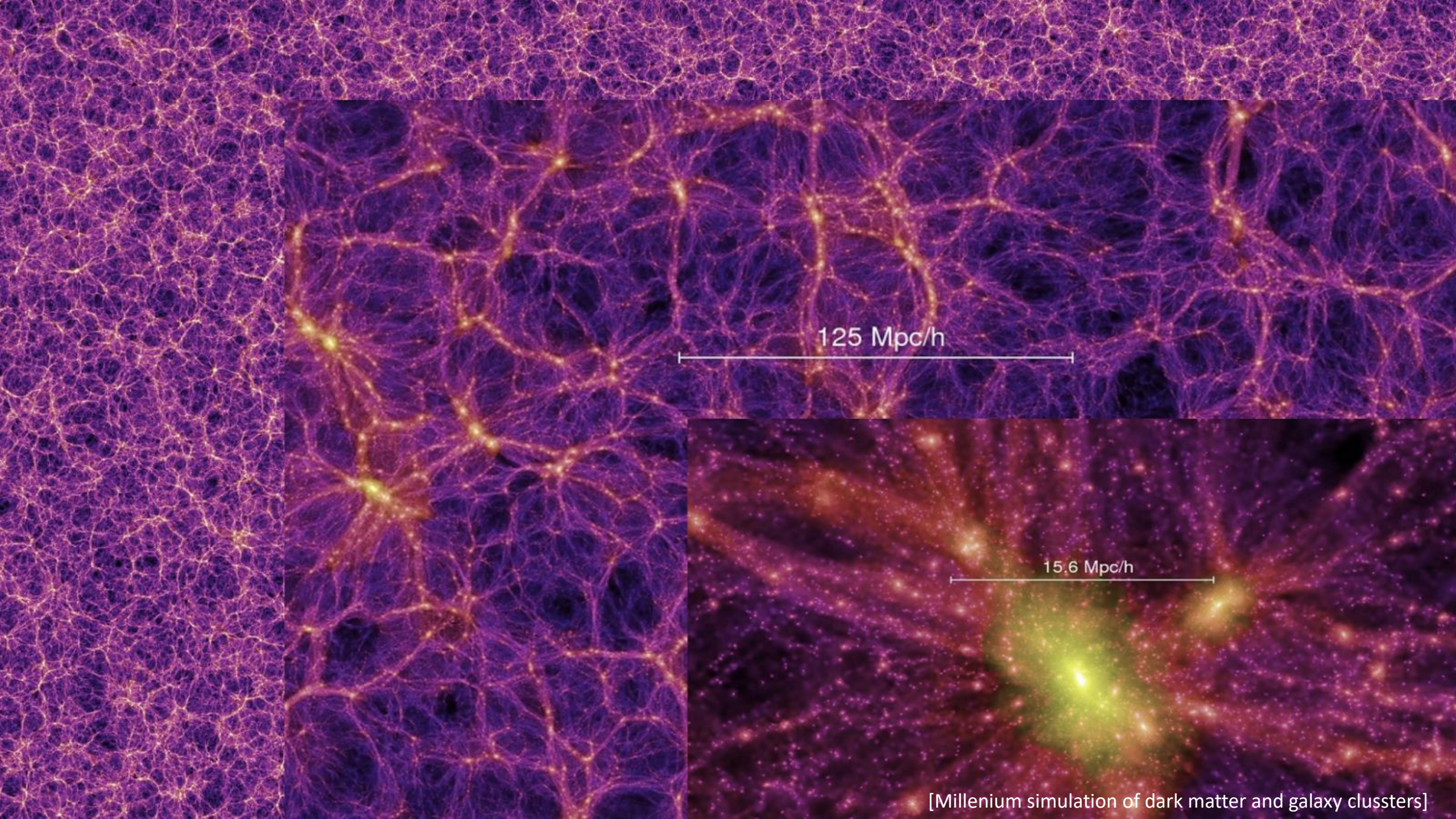
Prayer . . .
exercising
the presence
of God

“The universe computes. The computing universe is not a metaphor, but a mathematical fact: the universe is a physical system that can be programmed at its most microscopic level to perform universal digital computation. Moreover, the universe is not just a computer: it is a quantum computer. Quantum mechanics is constantly injecting fresh, random bits into the universe. Because of its computational nature, the universe processes and interprets those bits, naturally giving rise to all sorts of complex order and structure.”— **Paul Davies**

“'Participant' is the incontrovertible new concept given by quantum mechanics. It strikes down the 'observer' of classical theory, the man who stands safely behind the thick glass wall and watches what goes on without taking part. It can't be done, quantum mechanics says it...May the universe in some sense be 'brought into being' by the participation of those who participate?” -John Archibald Wheeler

"We couldn't build quantum computers unless the universe were quantum and computing. We can build such machines because the universe is storing and processing information in the quantum realm. When we build quantum computers, we're hijacking that underlying computation in order to make it do things we want: little and/or/not calculations. We're hacking into the universe.” – Seth Lloyd, MIT

“It from bit symbolizes the idea that every item of the physical world has at bottom...an immaterial source and explanation...that all things physical are information-theoretic in origin and that this is a participatory universe.” - John Archibald Wheeler

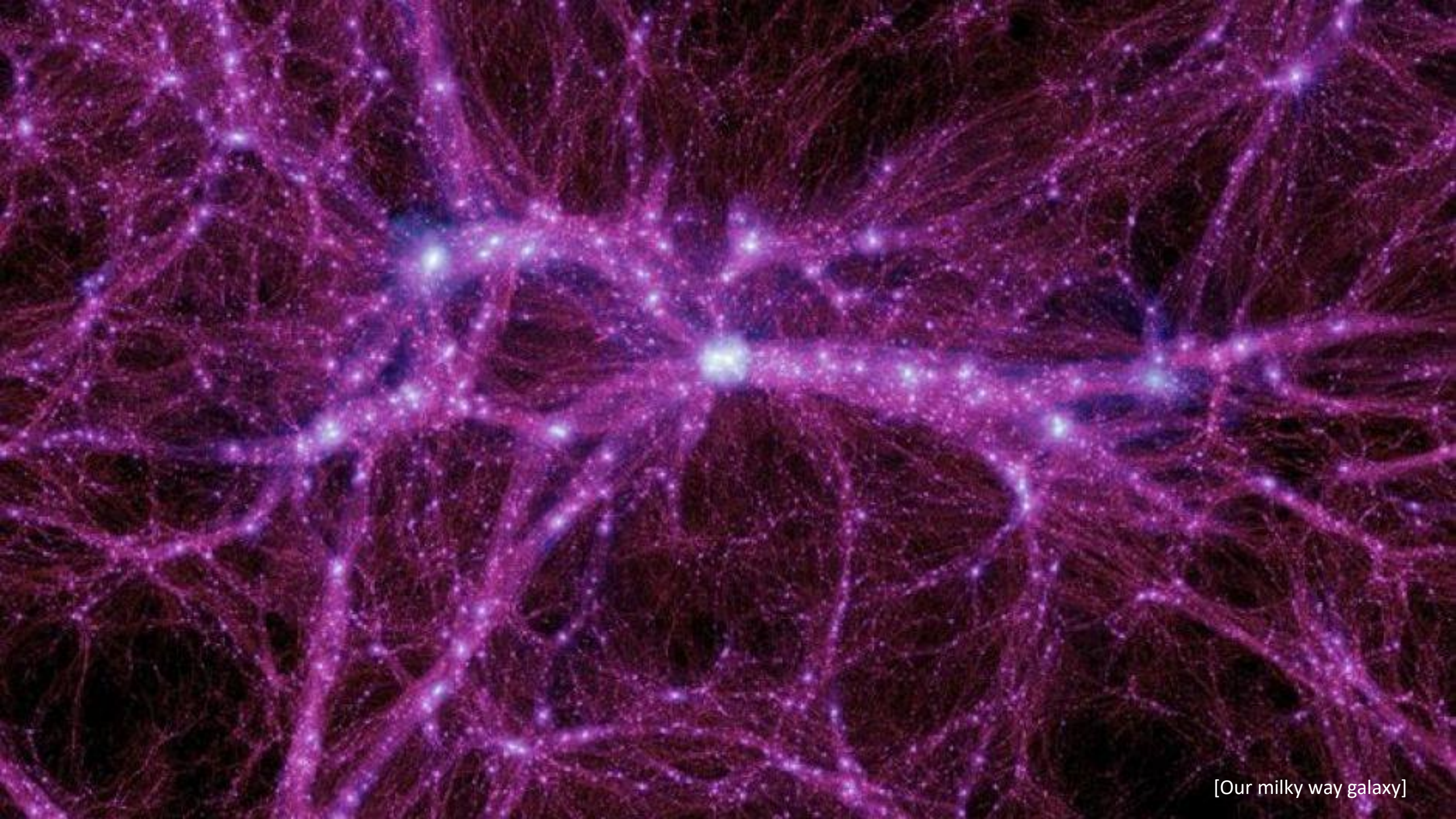


[Millennium simulation of dark matter and galaxy clusters]

“The idea is that in the future, humans will be able to simulate entire universes quite easily. And given the vastness of time ahead, the number of these simulations is likely to be huge. So if you ask the question: “Do we live in the one true reality or in one of the many simulations?” the answer, statistically speaking, is that we’re more likely to be living in a simulation.” – Silas Beane

“The strongest argument for us being in a simulation is the following: 40 years ago we had Pong—two rectangles and a dot—that is what games were. Now, 40 years later, we have photo-realistic 3D simulations with millions of people playing simultaneously, and it’s getting better every year. And soon we’ll have virtual reality, augmented reality—and if you assume any rate of improvement AT ALL...video games will become indistinguishable from reality. Even if that rate of advancement drops by 1000 from what it is right now. Then you just say, OK—let’s imagine 10,000 years in the future, which is nothing on an evolutionary scale. So, given that we’re clearly on a trajectory to have games that are distinguishable from reality, and those games can be played on any set-top box or PC or whatever...*it would seem to follow that the odds we’re in base reality is one in billions.*” – Elon Musk

“We live in a simulation. Or, more accurately, we can’t know, statistically speaking, that we *don’t* live in a simulation.” —David Chalmers

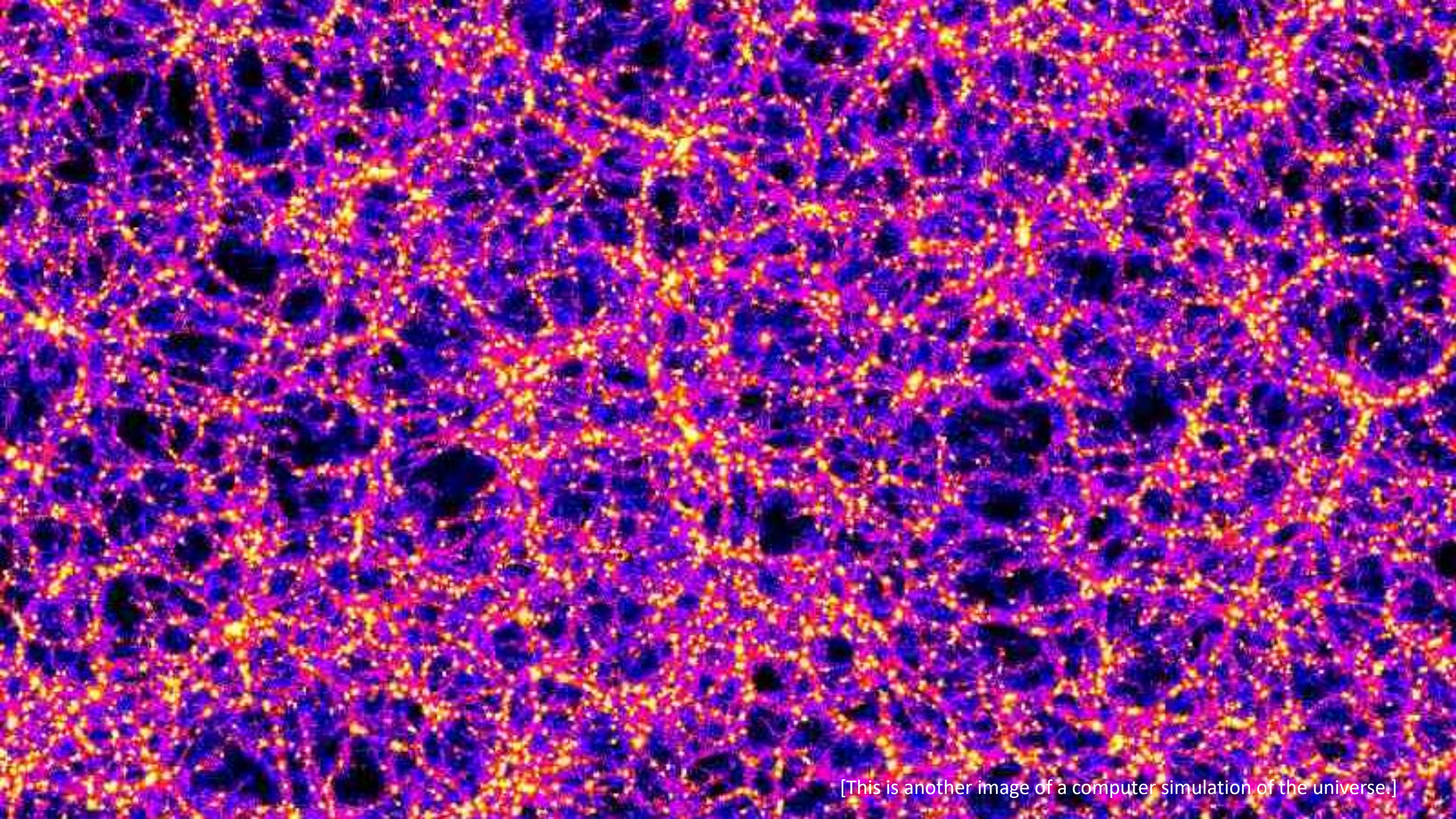


[Our milky way galaxy]

“Few people think that the mere fact that trees are grounded in quantum processes makes them less real,” Chalmers writes. “I think that being digital is just like being quantum mechanical here.” – Wired Magazine

“The paradox of Chalmers’ “simulation realism,” in fact, is that, once you embrace it, there does not follow from it some corollary disenchanting of reality. On the contrary, so many isms that in modern times have been dismissed as mystical, supernatural—dualism, panpsychism, animism—here find themselves reenchanting, imbued with a profound new vitality. We and everything around us become not less real but, in a way, more real, animated panpsychically by forces both here and, dualistically, there, somewhere else, somewhere, let’s say, above. This line of thinking extends, as you might have already guessed, to the ultimate ism of all, theism, the belief in a creator, and isn’t that all simulation theory, in the final analysis, really is? Religion by a new, technological name?” – Wired Magazine

“Quantum physics most of all. An inflaton? More like a *simulaton*! Or “spooky action at a distance,” wherein two far-apart but somehow “entangled” particles mirror each other perfectly? Clearly it’s just the computer halving the energy requirements—much as you running into someone you haven’t seen in 15 years at a random house party in a foreign country might be evidence of the same kind of cost-cutting subroutine by the cosmic machinery. Coincidences, concurrences, redundancies: These things must save lots of power, too.” – Wired Magazine



[This is another image of a computer simulation of the universe.]

“I’ve considered myself an atheist for as long as I can remember,” Chalmers writes. “Still, the simulation hypothesis has made me take the existence of a god more seriously than I ever had before.” He even suggests Reality+ is his version of Pascal’s wager, proof that he’s at least entertained the idea of a simulator. Not that he’s sure such a being deserves to be worshipped. For all we know, it’s some little xeno-kid banging away at their parents’ keyboard, putting us through catastrophes the way we might the citizens of SimCity.” – Wired Magazine

“Every so often, when I’m feeling frisky, I go outside and twist up my eyes, just to see if I can catch the quickest glimpse of the pixels making up this pure, planetary simulation we call Earth. Sometimes, and even when I’m completely sober, I feel like it’s working. Tiny squares really do seem to be blipping in and out of existence! Other times, and especially when I’m completely sober, I feel like a complete dinkus.” – Wired Magazine

“God created light and darkness.
Translation: The simulator
created 1s and 0s.” – Wired
Magazine

“The point of the book, I think, is the same as Chalmers’: to make the case not only that one *can* live meaningfully in a simulated world, but that one should. That one must. Because maybe goodness is what keeps the simulation going. Maybe goodness, and the spark and serendipity that comes of it, is what keeps the simulators interested. For at the end of *The Anomaly*, the opposite happens. Someone ignores the possibility for hope, and gives into badness, into base inhumanity. The result is the scariest thing imaginable. Someone, somewhere, in whatever dimension is not our own, turns the simulation off.” – Wired Magazine



[2021 simulation of the universe contained 2.1 trillion particles stored on 3,000 TB of storage]

“It doesn’t bother me if this proves to be a ‘simulation’.

Doesn’t bother me that the world is round. Doesn’t bother me that the earth is not the center of the universe. Just yet another potential deeper level of understanding.

No big whoop.

And if it is a spiritual simulation . . .
how cool is that!”

– Jed Anderson







Questions . . .

(if this is a “simulation”)

. . . might one of the unique roles of human beings be to protect and foster space for spiritual growth in the system? . . . might spirituality be the truly independent variable in the system . . . the variable in which AI cannot enter since it cannot connect with God(?) . . . the primary variable for which the “simulation” is being run???

What a magical system this is! [whatever it is]

... and where there's magic ... there must be a magician!!!



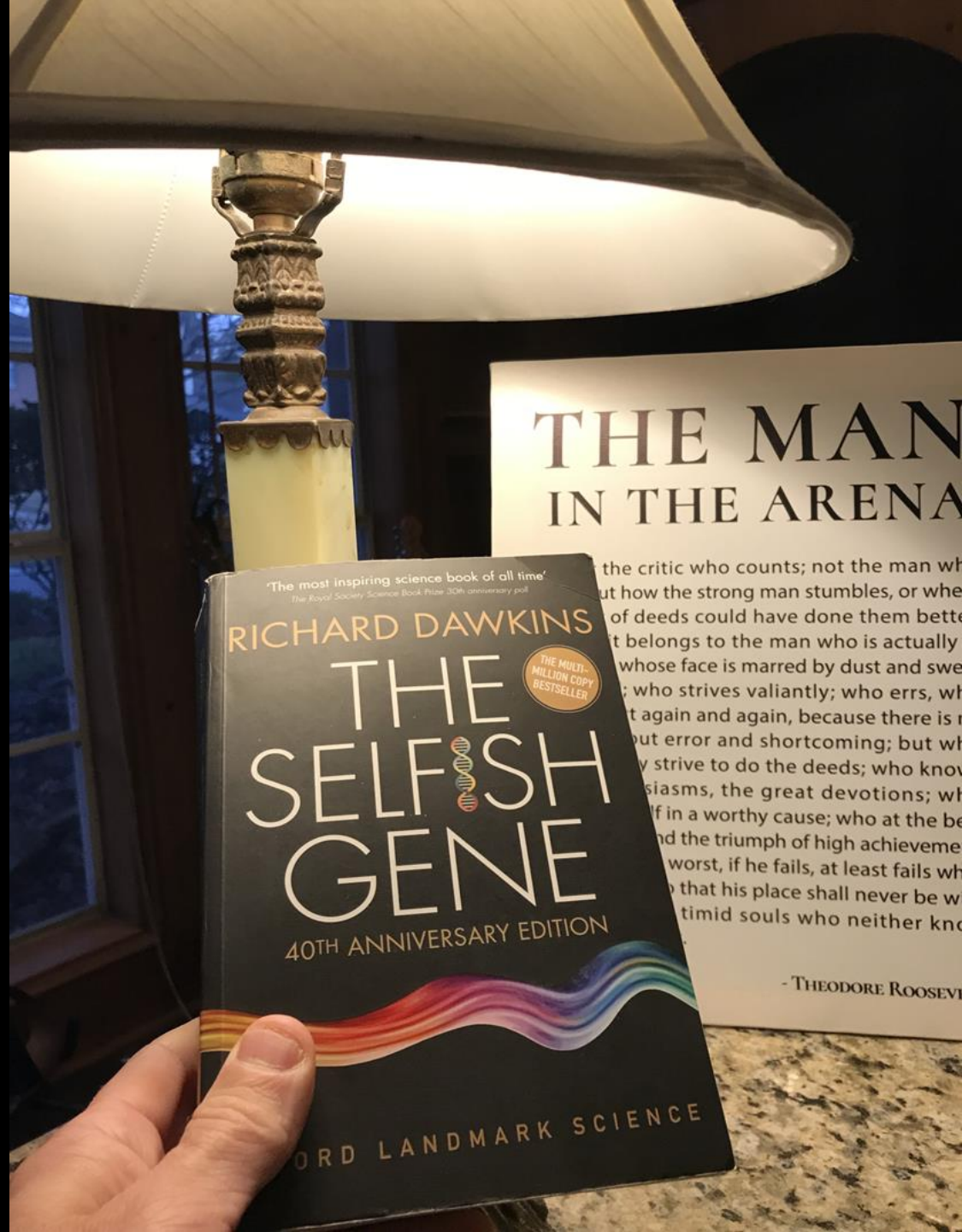


Are you matter or information?

(more fundamentally)

... and why is this potentially relevant to the future of spiritual formation?

---The Royal Society



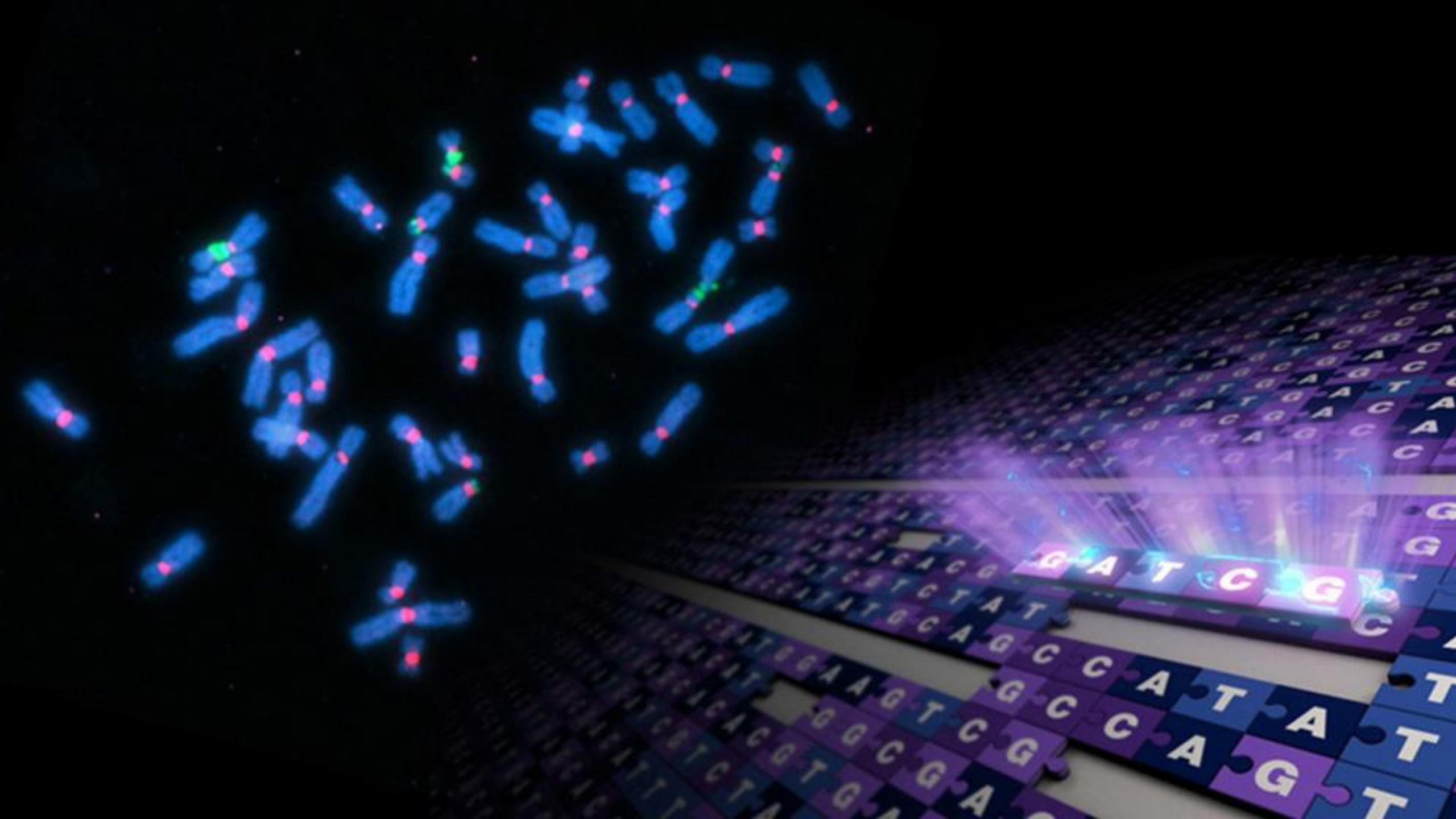




“What lies at the heart of every living thing is not a fire, not warm breath, not a ‘spark of life’ . . . it is information.”

– Richard Dawkins







Cell type	Length of time
Brain cells	Lifetime
Bone cells	25-30 years
Muscle cells	10 – 16 years
Fat cells	8 years
Lymphocytes	over one year
Liver hepatocytes	0.5 – 1 year
Red blood cells	120 days
Skin cells	10-30 days
Platelets	10 days
Colon	3-4 days
Small intestine epithelium	2-4 days
Stomach	2 days
Blood neutrophils	1-5 days

The information in your body is continually making almost entirely a “new you” using matter and energy



- **Your body makes 330 billion new cells a day**
- **1% of your body's cells are replaced every day**
- **98% of the atoms in your body are replaced every year**
- **By the end of 10 years, most of your body has been replaced**



“More fundamentally you are not matter. You are information that makes matter.”

- Jed Anderson





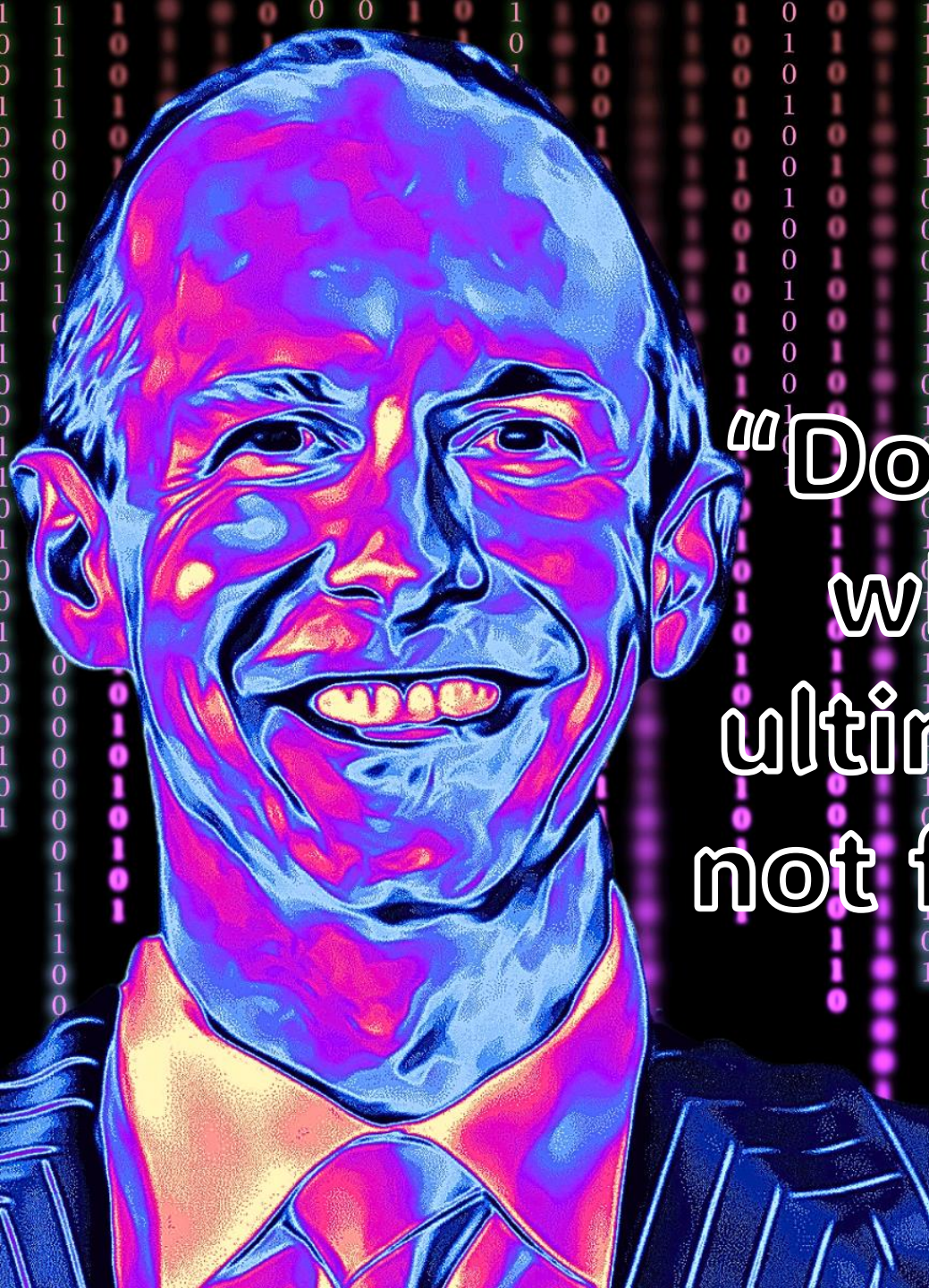
“Matter doesn’t
really matter.”

– Jed Anderson



“We are more fundamentally information.”

– Jed Anderson



“Does it really matter then where this information ultimately resides if we are not fundamentally matter?”

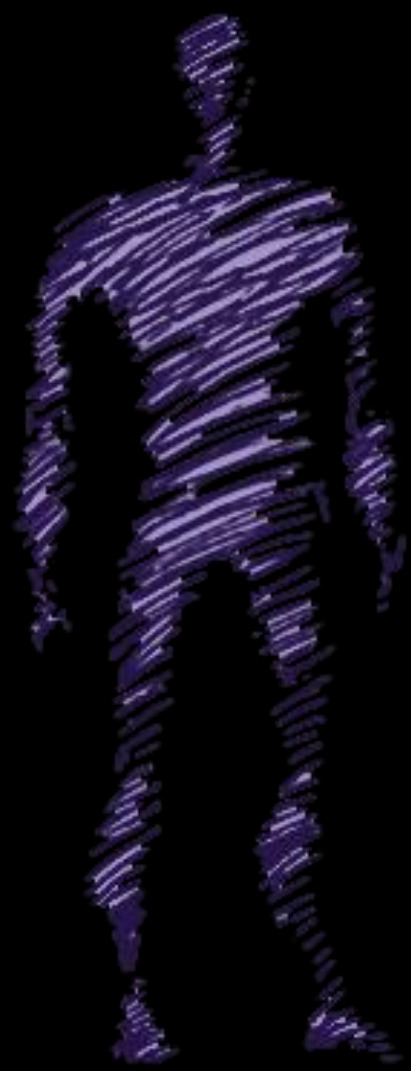
— Jed Anderson



MAN



BODY



SOUL



SPIRIT

Human Evolution

Human 0.0 → Human 1.0 → Human 2.0 → Human 3.0 (?)

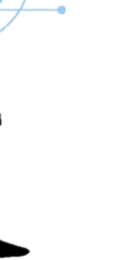
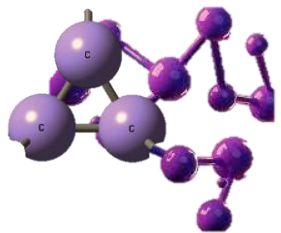
Spiritual Substrate (?)

Biological
Substrate

Technological
Substrate

Chemicals

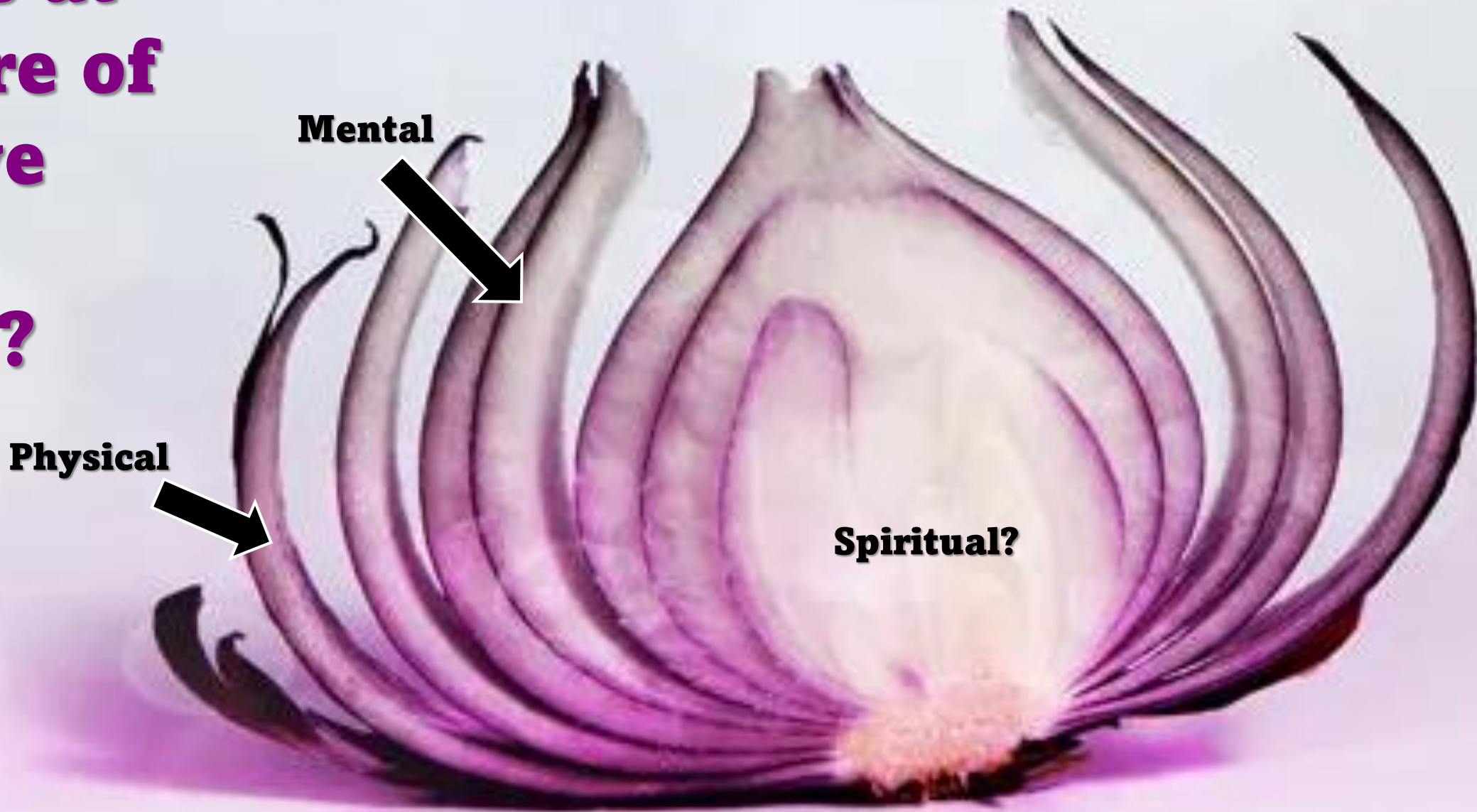
Information



Does the
flesh truly
count for
nothing?

- ❖ “Human 2.0 is coming faster than you think.” - Forbes
- ❖ "Homo sapiens, the first truly free species, is about to decommission natural selection, the force that made us. . . . Soon we must look deep within ourselves and decide what we wish to become." - E.O. Wilson
- ❖ “Two billion years ago, our ancestors were microbes; a half-billion years ago, fish; a hundred million years ago, something like mice; ten million years ago, arboreal apes; and a million years ago, proto-humans puzzling out the taming of fire. Our evolutionary lineage is marked by mastery of change. In our time, the pace is quickening.” —Carl Sagan

**What's at
the core of
who we
are as
beings?**



What if any capability makes us truly unique in the universe?

Physical.

[Machines started getting better than us in the 1800's]



Mental.

Intelligence.

[Machines started getting better than us in the 2000's]



Spiritual?

Sentience.



When machines getting better at physical work, we started focusing more on mental work

When machines getting better at intellectual work, where will humans focus?

~~BRAINS.~~ ~~BRAWN.~~

Machines are replacing (or are better at) many things we can do physically, and now mentally . . .

Spiritual Connectivity?

Millions of people will soon begin to ask themselves a difficult, practical, and existential question . . . **“Of what continuing value am I . . . if it’s not what I can do with my brains or brawn . . . what is it?”**

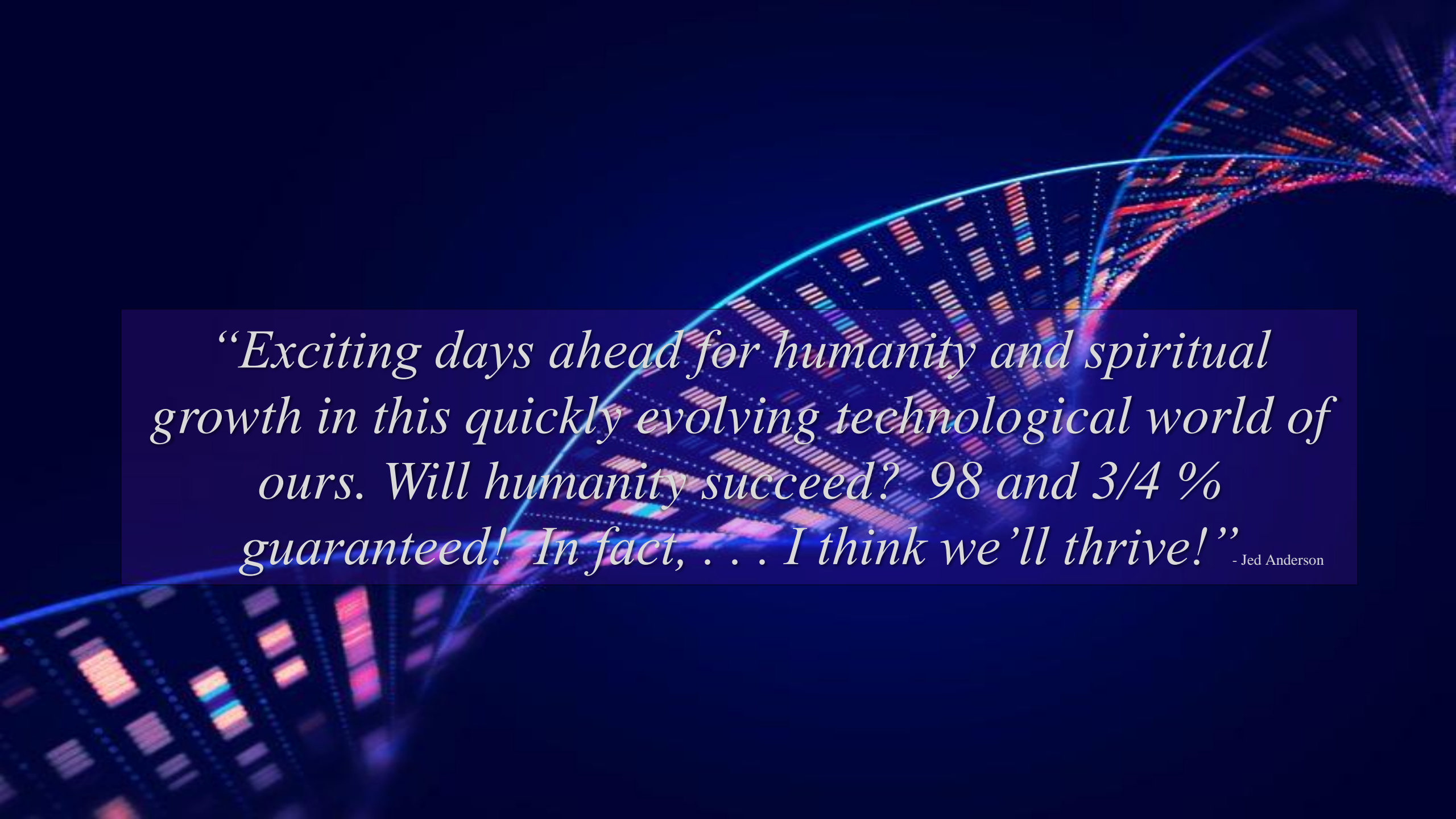
Will this lead to the greatest spiritual growth in the history of humanity?

The layers of the onion are getting peeled back.



Who are we at our core? Is there some capability or connection that makes us truly unique and special in this universe? If so, how do we further develop this capability or connection?

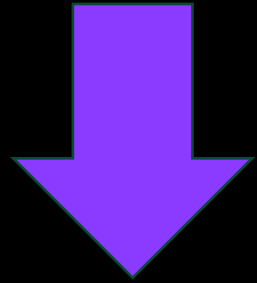




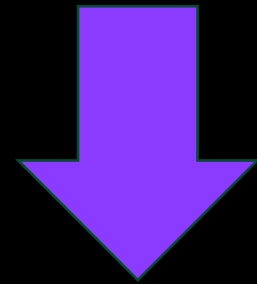
“Exciting days ahead for humanity and spiritual growth in this quickly evolving technological world of ours. Will humanity succeed? 98 and 3/4 % guaranteed! In fact, . . . I think we’ll thrive!”

- Jed Anderson

Homo Sapien (Human 1.0)



Homo Technologicus (Human 2.0)



Homo Spiritus (Human 3.0)



HUMAN 3.0
homo spiritus