

Holographic universe: implications for cancer, ALS, parkinson's, autism, and ME/CFS

Alethea Black*

Abstract

The holographic principle was proposed by Nobel laureate Gerard 't Hooft in the 1990s and it has also been modeled by Leonard Susskind and Stephen Hawking. We've heard light mentioned with regard to the fundamental nature of reality for a long time; God said Let there be light, we are the light of the world, etc. But we haven't investigated a possible role for the speed of light in our illnesses. This paper will do just that. The central premise is that light's "speed" is a reflection of the degree to which the observer is removed from its source. In its Platonic state, light's speed is zero. It is light from which time (i.e. light that has speed), by degrees, emerges. The Big Bang can be envisioned as a sphere, the center of which is a point, Alpha. Via expansion, Alpha becomes a sphere, Omega, by degrees, where each degree is c . For any given Alpha, the circumference of a circle on the sphere, Omega, is a set of resonant points that represent the speed of light or "end of time." Every radius—every line drawn from Alpha to Omega—is an arrow of time, a parallel universe. Alpha (M or E) and Omega (E or M) increase in tandem, maintaining the degree of separation required by special relativity, $E=mc^2$. The holographic sphere of points equidistant from the Big Bang on which we find ourselves is not the only sphere of points equidistant from the Big Bang. There are spheres that are smaller (past) and larger (future) than ours. Where an arrow of time intersects a sphere-brane of light's speed will be treated here as a "2D hologram." For an observer behind the hologram, reality will appear to be accelerating/expanding. For an observer in front of it, reality will appear to be decelerating/contracting. For an observer at the speed of light, time is no longer a variable. †

Keywords: *holographic principle; emergence theory; cognitive science; consciousness; perception; metaphysics; pre-cognition.*

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1. Introduction

This paper is a refutation of materialism. Materialism has been refuted many times before, by such people as Plato and George Berkeley. Samuel Johnson famously pushed back against Bishop Berkeley's idea of *immaterialism* by kicking a rock and saying: "I refute it thus."

Kicking a rock is a clever retort, but it doesn't close an argument. When I kick a rock, I am interacting with the 3-D images our eyes see. But many contemporary scientists—including Donald Hoffman, Beau Lotto, and Anil Seth—have produced compelling evidence that the 3-D images our eyes see are, in effect, optical illusions (Hoffman, 2014; Lotto, 2017; Seth, 2017).

The brain is not a passive observer, like a camera lens. The brain *actively composes* what we perceive. We know this; we have studied extensively how perception works. "Your brain hallucinates your conscious reality" is the title of neuroscientist Anil Seth's popular 2017 TED talk. Yet the significance of what we know has not fully sunken in. The sun is 400 times larger than the moon, and also precisely 400 times farther away. "What a coincidence!" we say—a phrase we echo when we encounter a black hole (Sagittarius A*), and then another black hole (M87) that is 1000 times larger, and also ... precisely 1000 times farther away.

But it is for children to speak of coincidence. It's time we draw back the lens and consider again the "unreasonable effectiveness" of mathematics—a phrase coined by Eugene Wigner in 1960—in describing the natural world. Perhaps mathematics so aptly describes what we perceive because the 3-D reality we perceive with our senses is being rendered.

For something to be rendered requires a medium. It means the same image can be achieved via different means—from different directions, so to speak. Imagine an ink blot on a piece of cloth, but add a dimension. So it's a sphere of ink, analogous to a sphere of light, in a 4-D medium called time. When time contracts (when the cloth is squeezed), the sphere explodes into being. When time dilates (when the cloth is stretched), the sphere contracts into being. In other words, the ink and the cloth are not wholly separate; it is the state of one that causes the other to *emerge*. What does it mean to suggest that the material world is *emergent*? It's like saying we live in a world made of ice, but that ice is made of something else: water. We live in a world ostensibly made of matter, but I'm suggesting that matter is made of something else: light. There's a word for a world that emerges from light. It is holographic.

To propose that the world we perceive with our senses should be interpreted vis-à-vis its relationship to light's speed—i.e. that we live in a holographic universe—is hardly a new idea. What's new is the maths that could prove it.

Light's behavior appears to flout our understanding of spatial orientation. Four decades ago, physicist Alain Aspect demonstrated light behaving non-

locally, a quality referred to as “spooky action” at a distance (Aspect, 1982). Perhaps space is not the proper medium against which to observe and to measure light.

This essay will explore the idea that while matter’s medium is space, light’s medium is time. It will suggest that it is via examining the body’s relationship to time that we will solve our illnesses.

2. Aim/Background

In 1973, my father, Fischer Black, published a paper that applied a principle of physics (Brownian Motion) to economic markets. In 2022, I will publish a paper that applies a principle of physics (the holographic principle) to human health. It took both of us months—in my case, years—to get our ideas into the mainstream. “What We Call the Moon: Cognitive Science Meets Human Health” will soon be published in the peer-reviewed *Journal of Social and Psychological Sciences*. Here is the story behind the story.

One morning, I woke up and couldn’t see. After a minute or two, my vision came back to me, but this was one more symptom in a constellation of symptoms that had stymied physicians and me for years. I was forced to investigate human health independently, a journey chronicled in my memoir, *You’ve Been So Lucky Already* (Little A, 2018). A turning point occurred, oddly enough, on Facebook. After learning that many people with chronic illness did well by limiting dietary oxalate—oxalate is a crystal found in plants capable of photosynthesis—I joined a Facebook group called “Trying Low Oxalates.” At the top of the page sat an image of an oxalate crystal. Staring at it one day, while dealing with my usual gastrointestinal dysfunction, joint pain, and neuroinflammation, an insight hit me: That’s not crystal. That’s light.

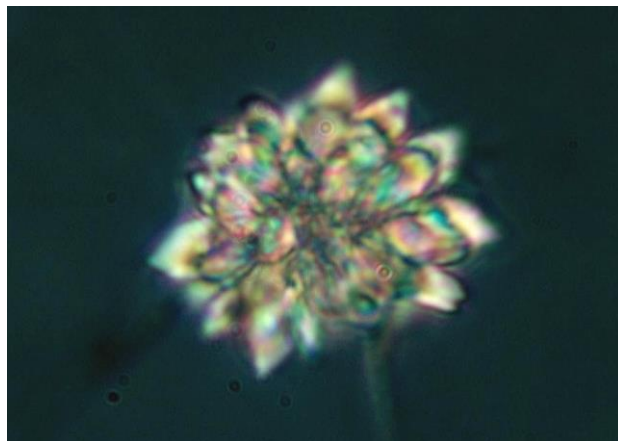


Fig.1 Oxalate crystal. Image: Facebook, Trying Low Oxalates

While I'd heard of the idea of a holographic universe, I didn't know much about it. My ignorance turned out to be an asset. When the Muse whispered in my ear one evening: *The speed of light is zero*, I didn't protest. On the contrary, I was intrigued. *The speed of light is zero!* I said into the tape recorder I keep under my pillow for just such occasions. *What else have you got?* The Muse, it turned out, had quite a lot.

What follows will be shocking to read. I myself was shocked by it. It challenges the way we have viewed ourselves for centuries—millennia—but it shines with hope for the future. I submitted it to a foundation peopled with leaders in the fields of theoretical physics and cognitive science. *We are interested in this*, they said, *But who are you? Are you a physicist by education? Do you have a masters or a doctorate?*

I have neither a masters nor a doctorate. Yet their response struck me as irrelevant and supercilious. They were the lion, I could see, who did not believe that anything of interest could come from the mouth of a mouse.

But the mouse will have her day.

3. Methods/Results

In these models, the intersection of an arrow of time with a sphere-membrane of light's speed results in a 2D hologram. Time and light are "co-emergent," each serving as the background against which the other is perceived.

When time slows down from the perspective of an observer (when the cloth is squeezed), light explodes/emerges—viz. the fourth state of matter experiment. (Another example? The gas giants to our right.) When time speeds up from the perspective of an observer (when the cloth is stretched), light implodes/emerges—viz. the double-slit experiment. (Another example? The rocky planets to our left). This would seem to suggest a specific mathematical baseline for the observer. I would like to propose that light qua light or light as light is the observer, and that light's speed relative to itself is zero.

If light is the medium from which time emerges, and time is the medium from which light emerges, what should we call the focal point of a universe? Let's call it *Now*.

We typically treat what we perceive as *Now* as the only moment in time that exists at any given moment in time. But there is evidence beyond Einstein's famous 1955 quip to suggest that *Now* is myriad and that past, present, and future co-exist. In 2011, Cornell psychologist Daryl Bem published "Feeling the Future: Experimental Evidence for Anomalous Retroactive Influences on Cognition and Affect"—an article that offered

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statistical evidence for pre-cognition (Bem, 2011). If pre-cognition exists, the future already exists.

The premise here is simple: Though we experience each day individually, as “a day,” all the days occur simultaneously, nesting one within another like Russian dolls. Time has layered membranes or “branes,” like an onion.

Although you and I are experiencing today for the first time, today has always existed and will always exist. Because we possess free will, today varies a bit. But within a given universe or loop of time, it will have similarities with itself, because our free will is constrained by our “fate”: our simultaneous past, happening to our left; and our simultaneous future, happening to our right.

Physicist David Bohm spoke eloquently of the wholeness of quantum reality, famously suggesting that what we perceive as different fishes may in fact be the same fish, being viewed from different sides of the aquarium.

I believe Bohm was correct. For any given point in time, a corresponding point on the brane of time behind it will appear supersaturated (e.g. sun); and a corresponding point on the brane in front of it will appear dilated (e.g. moon). When looking forward in time, we see more than one outcome; when looking backward in time, we see fewer. One Wednesday sees >1 Fridays and <1 Mondays. We perceive time vis-à-vis ourselves.

Where the brain locates itself in time, therefore, could have significance for our health.

If I misgauge the Planck length as longer than it is, as if observing the 2D hologram from behind it, the plain light of day will appear supersaturated to me. In response, my brain may try to slow time down, perhaps with dopamine. Then I get caught in a loop. The more I slow time down, the more I misperceive the Planck length, so I slow time down again. Could this play a role in the core etiology of Parkinson’s?

If I misgauge the Planck length as shorter than it is, as if observing the hologram from in front of it, the plain light of day will appear dilated to me. In response, my brain may try to speed time up, perhaps with serotonin. Now, too, I get caught in a loop. The more I speed time up, the more I misperceive the Planck length, so I speed time up again. Might this play a role in the core etiology of Stephen Hawking’s and Lou Gehrig’s disease (ALS)?

Do you know what your brain sees? No. You don’t. You know only what your brain offers up to you. Cognitive scientist Donald Hoffman and his team have the maths to prove that we do not see veridically (truthfully) (Hoffman, 2019). To what extent is the Parkinsonian brain trying to stabilize the perception of a world that is spinning left→right? To what extent is the ALS brain trying to stabilize the perception of a world that is spinning right→left? We take what our eyes deliver to our brains as frank information, but I believe it is being filtered through a lens: the speed of light.

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When it exists without an observer, light has no speed. It is only when it splits into light *plus an observer*—i.e. only when it is *emergent*—that light has speed, and its speed exists in relationship to that observer.

Emergence theory is not balls of matter in a sea of air. It's more like precipitates in solution. When I'm high density, my environment is *by definition* low density. But if I'm high density and my environment is low density ... that's an explosion! I need external tension to keep from flying apart. But angiotensin and aldosterone can cause me to retain sodium, which increases my density, so I get caught in a loop.

And when I'm low density, my environment is *by definition* high density. But if I'm low density and my environment is high density, that's an implosion! I can use anti diuretic hormone to provide internal pressure, but anti diuretic hormone, which makes me retain water, will lower my density—another loop (ME/CFS?).

When we don't keep pace with the speed of light—if we're toggling between Alpha and Omega either too quickly or too slowly—our mass-energy equivalence gets skewed toward matter. Under these conditions, instead of electricity and magnetism in the body, we get their material “precipitates”: copper and iron. When we precipitate out of solution (e.g. the rocky planets), it's a paradox: We are too cold because we are too fast. When we explode (e.g. the gas giants), it's also a paradox: We are too hot because we are too slow. When we die from frostbite, it is a kind of burning.

In these models, frostbite (to be so cold, time explodes) is the opposite of cancer (to be so hot, time implodes). When we have frostbite, time is too left-shifted toward Alpha. When we have cancer, time is too right-shifted toward Omega.

Adjusting pH is a two-pronged effort. We must maintain pH7. If I'm going to slow down methylation, if I'm going to generate less acid via metabolism, I had better be acidic. And if I'm going to speed up methylation, if I'm going to generate more acid via metabolism, I had better be alkaline.

If I am too alkaline (melatonin, ketamine, general anesthesia), I force time to speed up. And if I'm too acidic (dimethyltryptamine, LSD, psilocybin), I force time to slow down.

Because pH7 is life-critical, in a sense, I can only slow down if I'm already too fast. So what happens if I get caught in a loop where I keep using melatonin to speed time up in order to get to a brane from which I can slow down? Could that be involved in ME/CFS, Chronic Fatigue Syndrome?

And I can only speed up if I'm too slow already. So what happens if I get caught in a loop where I keep using dimethyltryptamine (DMT) to slow time down in order to get to a brane from which I can speed up? Could that be involved in ASD, Autism Spectrum Disorder?

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Acceleration (matter→light) takes place beneath the speed of light. Deceleration (energy→light) takes place above the speed of light. The “speed of light” is just a mirrored expression of light’s density and speed. It’s range, a “distance,” that pairs a degree of light’s density (to time’s right) with a degree of light’s speed (to time’s left).

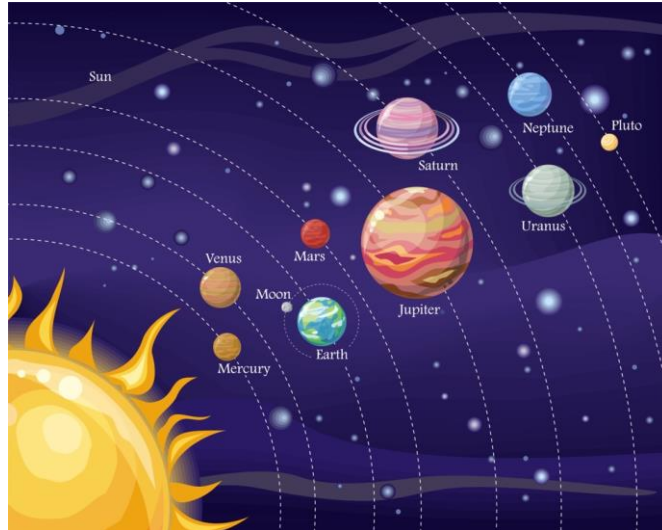


Fig.2 Solar system. Image: Vectorstock

So there’s Mars and the Moon; and Jupiter and Venus; and Saturn and Mercury. If light is going to have Mars’ degree of density, to the right of time, it has to have the Moon’s degree of speed, to the left. Light can be slower than itself, or faster than itself. But if it becomes slower than itself on one side of time, if it acquires mass, it simultaneously becomes faster than itself on the other. There’s a name for this mass-energy equivalence. It’s called special relativity.

Time—light’s circuit—isn’t static, like a painting, but rather oscillates, like a movie. It oscillates between paired (mirrored) iterations of light’s density and speed. Time oscillates, like a current, between Alpha and Omega. But Alpha and Omega can vary.

That’s a problem. That means I may be “obeying” special relativity—but doing so at the wrong scale. Weyl invariance (scale invariance, whereby the behavior of small pixels and large pixels is ordained to be the same) does not seem to apply to my biology. While it is non-applicable across the board, for me it is particularly false at the most fundamental level, when it comes to my blood, which trends toward macrocytic anemia, i.e. too many of my new red blood cells are “too large.” I have struggled with this since my 20s (Reynaud’s).

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“Too large,” according to whom? Too large according to you, maybe. But not according to them, if they are viewing the expanding universe from slightly in the future. But if I (or any part of my biology) slips too far into the future via acceleration, my light will precipitate out of solution too swiftly (cancer).

To say that time oscillates is like saying the world is being made/unmade, and made/unmade, and made/unmade. The rate of this oscillation is paramount. When we oscillate too quickly, our sodium-calcium exchanger becomes overwhelmed, neurons die, and we cannot encode new memories. When we oscillate out of sync with time, we become skewed toward matter. You might say that our heart—in addition to everything else—hardens.

If our iron:manganese ratio is too high, we will oscillate too quickly. If iron:manganese is too high, we will perceive the bar that indicates when we should switch from acceleration→deceleration as higher than it is. The body reads high iron:manganese as high gravity:electricity, i.e. the collapsing force is greater than the exploding force. Centripetal > centrifugal. High iron:manganese may be implicated in ALS (Lou Gehrig’s disease), where Fe is capable of inserting itself in MnSOD.

Conversely, if our manganese:iron ratio is too high, we will oscillate too slowly. If manganese:iron is too high, we will perceive the bar that indicates when we should switch from acceleration→deceleration as lower than it is. The body reads high manganese:iron as high electricity:gravity, i.e. the exploding force is greater than the collapsing force. Centrifugal > centripetal. High manganese:iron may be implicated in Parkinson’s disease, where Mn is capable of inserting itself in FeSOD.

Glyphosate, contained in the chemical pesticide Round-Up, severely depletes manganese in plants. Glyphosate has been implicated in neuropathologies such as Autism, Alzheimer’s disease (AD), depression, anxiety syndrome, Parkinson’s disease (PD), and prion diseases (Samsel, Seneff, 2015).

To deplete manganese via Glyphosate while simultaneously increasing non-heme iron via “enriched” bread and pasta—a common practice in the U.S. since World War II—is exquisitely damaging to the body’s understanding of time, which in these models is the central pillar of health. I have not consumed a bite of food that is not organic for three years. I don’t like even to be in the same room with it.

Once we begin to precipitate out of solution too swiftly, the time distortion accrues. When we are too dense, we must continuously spin too fast: a metabolic vortex.

The same vortex can operate in reverse. When we are not dense enough, we must spin too slowly.

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The two distortions mirror i.e. “observe” each other. On one side of the speed of light lens, light is imploding, precipitating out of solution. On the other side of the lens, it is exploding. We cannot see on both sides of the lens of time at once. In the rocky planets, we see the precipitate, not the [dark] energy that surrounds it. In the gas giants, we see the explosion, not the [dark] matter at its core.

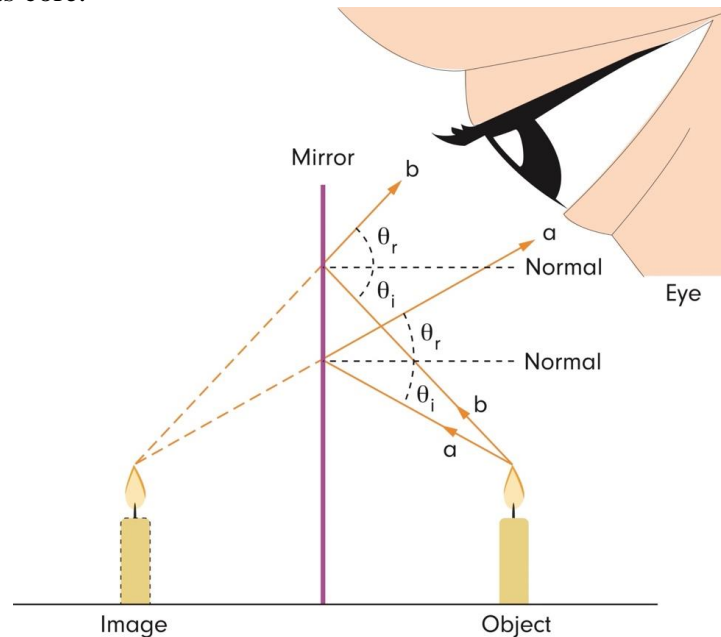


Fig.3 Finding the mirror by watching the reflected rays. Image: Shutterstock

I have observed the mechanics of time at work in my left ovary. My left ovary is experiencing time out of sync with the rest of my body. It forms multiple cysts simultaneously whose presence I can feel as painful twinges, similar to the sensations a woman sometimes feels at ovulation. My left ovary is exploding and collapsing faster than the rest of me.

Once the rate of expansion and contraction is out of sync with the rest of the body, outlier cells respond to their own resonance, effectively creating their own metronome. Cells are intelligent; like everything else in an emergent universe, they possess consciousness. When my ovary contracts in response to copper (the expanding background force), or expands in response to iron (the contracting background force), it is not misbehaving; it is doing what it is designed to do. It is simply that its circadian rhythm is off.

According to this paradigm, time’s arrow is curved—a universe is a loop of time. The shorter the loop, the greater the degree of curvature of the speed of light lens.



Fig.4 Holographic Universe. Source: DeviantArt

Once some of the cells in my body begin to misunderstand the time signature—the length of time’s axis and the degree of curvature of the speed of light lens—it’s very difficult to get them back on track again. We can try to alter time. With radiation. With hypo-methylating agents. But it’s tricky, because the speeds of light and time are linked. If we slow down time with hypo-methylation, we speed up light. So, in a way, we’re back where we started. Would a tumor in my ovary be more “acidic” than the rest of me? No. I suspect it’d actually be more alkaline. What’s more acidic is its time signature.

When I had polycystic ovaries—when my ovaries’ understanding of circadian rhythm was off—I put melatonin in my abdominal skin cream to try to target the ovaries transdermally. It eased the pain immediately—but the relief didn’t last. When cells think time’s axis is longer than it is, they need more melatonin. But the presence of melatonin—produced by the pineal gland at sunset, when time’s axis is longest—will signal that time’s axis is long! With a system based on perception, it’s easy to get caught in a loop.

But if time is a singularity—i.e. is one cloth, of a piece, the “fabric” against which light is perceived—there should be universal rules. So why is there *matter* at the center of the atom, but *energy* at the center of the universe?

Because matter and energy are not things *per se* but rather are *states* that exist in relationship to an observer.

The light on the brane behind an observer will appear supersaturated (“sun,” Alpha). The light on the brane in front of an observer will appear dilated—smeared out over time (“moon,” Omega).

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The accelerating universe is not approaching the speed of light. It is becoming itself. Alpha and Omega co-convert.

At one end of time (Alpha), as the universe freezes to death, it heats. At the other end of time (Omega), as the universe heats to death, it freezes. Alpha and Omega are but the poles that delimit a brain's understanding of time—"a day." There is, fundamentally—in both the mathematical and the philosophical sense—only one day. In spiraling fashion, "a day" exists at larger and larger scales.

The scale increases, but the relationship remains the same. "Hot death" and "cold death" are approximately 70 times 360 plus 7 times 360 (27,729 days) apart. Though the *relationship* is constant, their *actual* position along the continuum of time shifts. From the "straight ahead" position (the eclipse), "hot death" and "cold death" will appear—indeed, will *be*—superimposed.

Check it out for yourself. Was there an [eclipse](#) on a certain date? [Add or subtract 27,729 days](#) (~76 years) and see if there was *also* an eclipse on that date (spoiler alert: there was).

In other words, there is only one Halley's Comet. What changes is the speed from which we view it.



Fig.5 Halley's Comet. 1910 (left): Wikimedia Commons; 1986 (right): Bob King

This is why we need such funny maths (e.g. leap years) to make our calendars work. We have been trying to flatten time. Is there an observer who can travel around the globe, arrive at the same spot, and have it be the same day? I have never met such a person. The essential shape of time may be that of a spiral—a spiral that has a fundamental length or "lifespan" of approximately 76 years.

Let us try to see from light's perspective. A single rotation—360 degrees—is not a year. A single rotation is a day. Once there have been 7 days, the new unit for a day becomes 360×7 , or 2520. After that, the new unit for a

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day becomes $360 \times 7 \times 7$, or 17640. And so on. The spiral of time widens until it can widen no further, then it contracts.

For the June 7, 1969 Alethea, today I will be born for the first time. But for the September 23, 2017 Alethea, today I will be born again—as I have been born again every day for the past 17640 days.

In a holographic universe, matter (moon), light (the observer), and energy (sun) are all emerging from light. What shifts is the scale. For the value of “sun,” we may insert Mars, Jupiter, Saturn; for the role of “moon,” we may insert the Moon, Venus, Mercury. Etc. We see as light sees; we see special relativity. When we find a solar system that “[matches](#)” our own, it is not coincidence. Reality is being rendered, friends. Time is both eternal and iterative. If today you run into Nick Bostrom, who first proposed a simulation argument back in 2003, please buy him a drink from me (Bostrom, 2003).

The Sloan Digital Sky Survey (SDSS) has aggregated spectra from over 800,000 galaxies. We have been treating these as images of space. Let’s try seeing them as images of time.

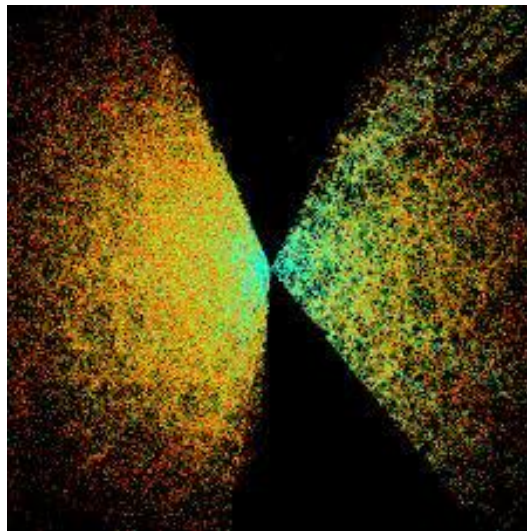


Fig.6 Left of time; right of time. Image: SDSS

Left of Now: When time collapses (“day,” when the cloth is squeezed), light explodes. *Right of Now:* When time explodes (“night,” when the cloth is stretched), light collapses. To understand where *Now* is, I must accurately gauge the Planck length. But there’s a catch: The same brain that’s responsible for *gauging* the Planck length is also responsible for *rendering* the Planck length, so it’s easy to get caught in a loop. And it’s inherently difficult. How can I accurately gauge length when either I or that which I am observing may be spinning?

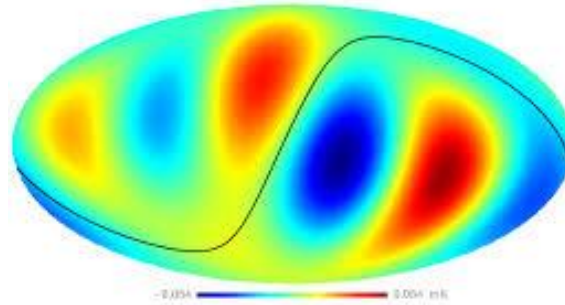


Fig.7 Large-angle anomalies in our Cosmic Microwave Background. Image: Craig J. Copi

An analysis of our Cosmic Microwave Background data by physicist Craig J. Copi reveals large-angle anomalies (Copi, 2010). These hot and cold regions appear to flip along the ecliptic (at the eclipse). How might we interpret this vis-à-vis this holographic model of the universe?

To the left of time, light “freezes” (dips below the speed of light) then accelerates. To the right of time, light “evaporates” (surpasses the speed of light) then decelerates. Like a pendulum. Before it can expand, it has to condense. Before it can condense, it has to expand. It operates around a “speed of light” axis. But ... the speed of light, according to whom? In this model, light’s speed is relative. Special relativity is the key to disease.

Why is the fundamental unit of time proposed here ~76 years (approximately 7×360 plus 70×360 or 27,729 days)? Because an arrow of time is both curved and straight. Time (spacetime) is curved. An arrow of time, as it is being drawn or executed, is both curving and collapsing. As it curves, light reaches a point where it has curved 180 degrees, like a rainbow. At 180 degrees, there emerges a shorter path for light to take—the straight line that connects the two “base points” of the rainbow. The eclipse.

At the eclipse, a new arrow of time emerges. Then this new arrow of time, which is shorter, begins curving and collapsing, until it, too, reaches 180 degrees—another eclipse—whereupon another shorter arrow of time emerges, and the pinwheeling process proceeds. The collapsing spirals of Fibonacci.

The collapsing spirals of Fibonacci, as evinced in the basal cell carcinoma on my shoulder, where some of my light, my cells—my DNA—is taking the shorter, “straight line” path of time.

What does the basal cell carcinoma on my shoulder look like? A sinkpit. A small vortex. An actual indentation, like a tiny tornado. You can almost see light spinning so fast that it’s spinning backward—imploding, precipitating out of solution (rocky planets). Instead, I need it to spin so slowly, it explodes (gas

giants). But if these cells could talk, what they might say is this: That's what we *are* doing, but our base point Alpha from which we are observing time is farther back than yours.

If my consciousness is viewing time from the left, these cells are viewing time from the right. If the rest of me is spinning left→right, these cells are spinning right→left. If the rest of my DNA is entering multiple universes as time moves forward, these cells are bringing multiple universes here.

The cancer is analogous to a local high-pressure system. A planet forming in the sea of me. But what can I do, other than try to have it removed? If I use vasodilating agents, like raw garlic extract or niacinamide, these rogue cells might use it to vasoconstrict. If I use hypo-methylating agents, to slow down time (methylation), that might work for a while. But there's a threshold—the speed of light—after which, to slow down is actually to speed up.

It's not that these cells can't dance. They're just dancing to a different beat.

According to this model, the Big Bang is an explosion that, like the Krebs cycle, runs both forward and backward. As it occurs (Big Bang), it is being reversed (Time). The forces of light and time hold each other together and apart; the universe explodes and collapses simultaneously; the centrifugal force opposes the centripetal force.

The Big Bang is always happening; it is eternal. The perception that it is happening progressively—the perception of time—is an illusion. It is an artifact of the act of observation.

The Big Bang is happening at the speed of light. But, the speed of light ... according to whom?

Once I pull back from a boundary—e.g. the speed of light—and observe it, my understanding of both its speed and my own speed is altered. In fact, it is nearly impossible to distinguish my own speed from the speed of my environment. Is my train moving, or did the train beside me just start to move? What's the difference between being on a *train* that's moving at the speed of light, and being on a train that's stationary on a *track* that's moving at the speed of light?

I cannot answer the question “Am I moving?” in a pure sense. I can only answer “Am I moving relative to X”—and even that, I have trouble with. When I look out the window of my train, I appear to be moving very fast vis-à-vis the trees right next to my window; only moderately fast vis-à-vis the trees in the middle distance; and vis-à-vis that point way out there, I seem to move not at all.

Light's speed is relative. And its relativity, I believe, is central to our health problems.

What I perceive as light could be light—true light, myself. Consciousness. Or it could be matter that is spinning at light's speed (expanding, left-hand

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spin: beneath the lens). Or energy that is spinning at light's speed (condensing, right-hand spin: above the lens). Based on the information my eyes deliver to my brain, I cannot tell if Jenny is spinning or I am running circles around her.

And if Jenny spins at the same rate at which I run circles around her, is not our speed relative to each other zero?

If the universe expands by degrees, where each degree is another speed of light, akin to a speed of light membrane of an onion, the membrane behind an observer in time will read as "sun." But the membrane ahead of an observer in time—the future—cannot be read.

We cannot see the light of the black hole inside which we reside. We see only its 3-D shadow, "moon." The difference between "black hole" and "sun" is the location in time of the observer.

In other words, we can perceive the singularity behind us. But we cannot perceive the singularity in front of us. Because the light in front of us is not yet a singularity; it is exploding in many directions at once. To see it as a singularity, *we* must be in front of *it*.

Only when light is behind an observer is there consensus. To an observer in yesterday, today can be spent myriad different ways; it is many different outcomes, superimposed. But to an observer in tomorrow, today was spent only one way. From our perspective, light to the right of time—the future—exists in a state of quantum superposition with itself. It is many outcomes at once. It is a sphere of points equidistant from the Big Bang—"parallel universes." But we do not experience the sphere of all outcomes; we experience only one point on that sphere, to which we connect via our arrow of time.

We do not see all the futures that exist. We see only the future we become.

Once the future is behind us, it shifts from "many [worlds]" to "one." This is why we see the wave pattern collapse in the double-slit experiment. *Now* exists within a narrow range: between the square root of the speed of light (moon), and the speed of light squared (Mars). Or the cube root of the speed of light (Venus) and the speed of light cubed (Jupiter). Or the fourth root of speed of light (Mercury) and the speed of light⁴ (Saturn). The *actual* values for mass-energy equivalence vary; only their relationship remains the same.

We are blind to the future *as the future*; we see the future only when it becomes the past. It sounds simple, but the implications are vast. Whether an event exists in the past or the future depends upon one thing: the observer. If our brains are like living computers that "see" at the speed of light, we have been misperceiving our world. The character of the light we perceive is not a property of light, but of the observer.

In other words, as Plato intimated, we have been as prisoners watching shadows on a cave wall. Light as we know it is not necessarily true light, *light qua light*. It could be light that has traveled "to the moon and back"—*light qua*

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matter qua light, or “sun.” Or light that has traveled “to the sun and back” (the “true” sun, i.e. a black hole)—*light qua energy qua light*, or “moon.” We see backward.

What’s more, we cannot know *what something is* and *how fast it is spinning* at the same time. Because how fast it is spinning is one way of rendering what it is.

In the same way that water could be rendered either by heating ice or cooling water vapor, I am suggesting that light can be rendered either by speeding up dark matter (sun) or cooling down dark energy (moon). The same speed, c , can be derived via multiplication or division.

So, if the Big Bang runs both forward and backward, is the universe exploding or collapsing? It all depends on from which direction it is being observed.

While inside time, we see through a glass darkly—partially. In sun, we see the speed, not the density it belies. Dark matter is the moon within the sun, like the black yin dot within the white yang swirl. In moon, we see the density, not the speed it belies. Dark energy is the [black hole] sun around the moon, like the black yin swirl around the white yang dot. While incarnate, our perception is limited. We cannot see around corners. For any given observer, a sphere is a dome.

The moment light bends—creating “matter” (fast light) above the speed of light lens, and “energy” (dense light) beneath it—scripture’s “twin domes”—an observer is born. But the moment light splits—goes from I AM, to I AM and the voice that hears it; goes from being superimposed with itself, to being itself plus an observer—there’s distortion. An observer creates perspective, and perspective is not absolute. Is it hot in here? It is to me, but it might not be to you.

If all of time is being rendered at once, our nervous systems may be designed to synchronize with the time signature of our environment. But is what I’m sensing in my environment *fast matter*, meaning I should slow down and speed up—or *slow energy*, meaning I should speed up and slow down? It can be hard to tell the difference, especially if matter and energy are the same thing, being viewed from opposite sides of the speed of light lens.

Cancer cells, when they “round up” in this video, may be reaching the speed of light squared, i.e. entering a new time signature. The speed of light squared is equivalent to two separate points on the same time sphere-membrane. Because both points render the same image, when we reach the speed of light squared, there is redundancy. Beneath the speed of light lens, there is achiral redundancy (images are identical). Above the speed of light lens, there is chiral redundancy (images are oriented left and right). Once images become chiral, they can no longer resolve to one. It is the equivalent of

two different time's arrows, like the two divergent arrows depicted below (right).

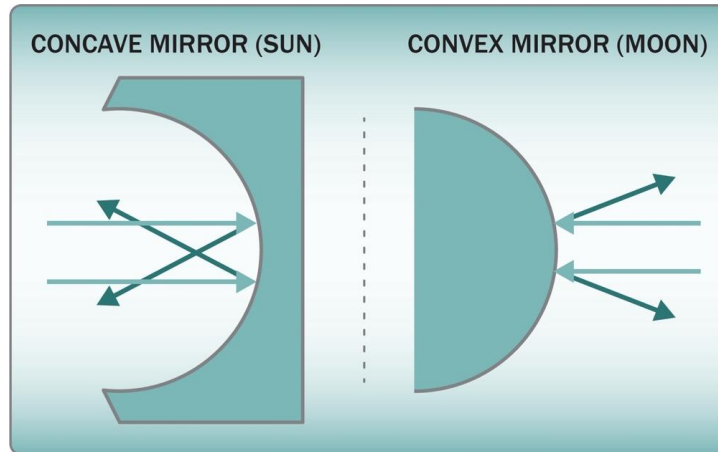


Fig.8 Concave (achiral) mirror; convex (chiral) mirror. Image: John Lunt

When we reach the speed of light squared during embryogenesis, we produce twins. When we reach the speed of light cubed, we produce triplets. Every observer constitutes a new universe.

4. Conclusion

In conclusion, this model asks whether the world we perceive with our senses is not static, like a painting; but rather oscillates, like a movie. If the world is being made/unmade, made/unmade, and made/unmade, the body, the cell—like the universe—has an anabolic and a catabolic rate. But we are better at pegging the rates of anabolism and catabolism to each other than we are at knowing what they are in an absolute sense—because there is no absolute sense. Time is relative.

Though we experience April 14, 2024 as sui generis and unique, April 14, 2024 is eternal. Though we experience ourselves as hair, nails, eyelashes, and skin—the whole magnificent body human that's inscribed and can be rendered by our DNA, our “code”—in truth, we are none of these things. We are not the lungs, but the breath. Not the brain, but the language. Not the lips, but the laughter. Not the heart, but the love.

In short, we are not the body. We are the consciousness. And so, too, is the world. At the moment the sun slips over the horizon and today starts, all the yesterdays start, and all the tomorrows start, simultaneously. Though still shocking—for now—the idea that time functions like a simulation is a serious one. In 2016, Bank of America alerted its clients there is a 20-50% likelihood.

Do you remember that hot July evening when we first heard the song “Nightswimming,” and I said Hey let’s go skinny-dipping in the moonlight, and we brought the bottle of wine down to the lake, and stood with the water up to our waists, with our palms barely skimming its glassy surface, and you said you felt maybe not *happy*, exactly, but a little less traumatized, and when I laughed, and hugged you, we both started to cry? That moment didn’t die. That moment is alive—we are just no longer in it. We are not the shell, the husk, the body. We are the consciousness. Somewhere out in the universe, we are always drunk and naked, slippery and endless, closing our eyes in the moonlight and trying to sing.

A life-long Judeo-Christian, as I worked on this hypothesis, religion suddenly came alive for me. Of course! “Matter” is not fundamental to the universe; consciousness is—the great I AM. We are all brothers and sisters—truly. Whereas, previously, I had taken the phrase “we are the light of the world” as a kind of metaphor, I started to look at it more literally. What if this whole thing—the visible universe—is happening at the speed of light?

If the visible universe (“the simulation”) is happening at the speed of light, core etiologies for cancer, Parkinson’s, ALS (Lou Gehrig’s disease), Autism Spectrum Disorder (ASD), and Chronic Fatigue Syndrome (ME/CFS) can be derived from the way the body relates to time. If the visible universe is taking place at the speed of light, treating cancer by operating on a tumor would be like trying to fix a broken movie by operating on the screen.

But ... I thought nothing could travel at the speed of light!

Matter can only travel at the speed of light if it is not, at base, matter. At the heart of this hypothesis is the idea of eternal emergence: matter is emerging from energy is emerging from matter is emerging from energy. The universe is self-simulating (Irwin et al., 2020) Like a pendulum, we swing from one end of the Big Bang—Alpha—to the other, until the end of time. At the “end of time”—Omega—the world doesn’t end. It merely pivots toward Alpha again. The Big Bang doesn’t happen and then end. The Big Bang is eternal. We are the Big Bang.

We have been treating the medium against which we make our calculations as space. Let’s try looking, instead, at the medium of time, and see if we can make some advancements in our understanding of physics and human health.

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I’d like to acknowledge the free thinkers who seek answers in spite of great obstacles and who often feel isolated and alone. You are not alone. I owe a particular debt of gratitude to all those persons who, throughout history, have sought to better understand the body human, including those who endeavored

to study their own pain. One iconic example is Leonard Lowe, whose decades-long struggle with *encephalitis lethargica* was documented by Oliver Sacks in his 1973 memoir, *Awakenings*. In the 1990 movie of the same name, a fictional Sacks (played by Robin Williams) is filming Lowe's tremors. There comes a point in the film when he wants to turn the camera off, but Lowe (played by Robert de Niro) won't let him. "Watch watch watch watch watch watch watch," Lowe implores, barely able to speak. "Learn learn learn learn learn. Learn from me."

We watched, Leonard. We listened. And we learned. Though our hearts broke and our eyes burned. We kept the camera rolling. We did not look away. Although it is my name on this paper, this learning has been achieved collectively.

Abbreviations

ALS	Amyotrophic lateral sclerosis
ASD	Autism Spectrum Disorder
CMB	Cosmic Microwave Background
DMT	Dimethyltryptamine
ME/CFS	Myalgic encephalomyelitis/Chronic Fatigue Syndrome
LSD	Lysergic acid diethylamide
SDSS	Sloan Digital Sky Survey
TED	Technology, Entertainment, Design

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