We are here obviously faced with events whose regular and lawful unfolding is guided by a ‘mechanism’ entirely different from the ‘probability mechanism’ of physics. We must be prepared to find a new type of physical law.

Erwin Schrödinger, *What Is Life?* February 1943, p. 28

The Physics of Life: Flipping a Quantum Coin

To understand the physics of life, first we have to understand *Quantum Mechanics*[^1].


> The situation before the observation could be described by the distribution $(1/2,1/2)$ and after observing heads our description would be adjusted to $(1,0)$. The problem is, what would you say to a student who then asks: “Yes, but what causes $(1/2,1/2)$ to evolve into $(1,0)$? How does it happen?”

To understand ‘how it happens’, try to trace back the relativistic history of your observation ‘heads’ $(1,0)$ from the instant $B$ ‘here and now’. Before ‘heads’ $(1,0)$ happened at instant $B$, the same ‘heads’ $(1,0)$ should have been a quantum coin $(1/2,1/2)$ in your past light cone $A$, in line with the axiom of causality ([Wikipedia](https://en.wikipedia.org)), $A \rightarrow B \rightarrow C$ (Piotr Chrusciel).

Q: Can you trace back the quantum coin $(1/2,1/2)$ in your past light cone $A$?

1. If your answer is ‘yes’, please explain (i) the dynamics of converting the former quantum coin state $(1/2,1/2)$ at $A$ into definite state ‘heads’ $(1,0)$ at $B$, and (ii) the history (if any) of the other definite state ‘tails’ $(0,1)$, which is patiently waiting (where?) for the next (if any) flipping of the quantum coin, to get 50% chance to be observed at some future time and place at $C$.

2. If your answer is ‘no’, please explain why. Do not use schizophrenic “infinite worlds”, please.
3. If your answer is ‘the question does not have an answer’, please explain why.

My answer to the quiz is (3): the quantum coin \( (1/2,1/2) \) is not a fact, like tossing a physical coin in the air, and therefore its “qubit” state \( \{|1>,|0>\} \) cannot live anywhere on the light cone. Even if the quantum beast has one observable ‘face’, like a quantum ball in 1D Hilbert space, it cannot be observed in the quantum air, like the intermediate “time” of a photon, “after” it was emitted but “before” it was absorbed (A2 in Slide 19 in Quantum Spacetime).

But where is the “qubit” coin \( \{|1>,|0>\} \)? What kind of ‘time’ is implied in Schrödinger equation?

As Alfredo Macias and Hernando Quevedo explain in gr-qc/0610057v1, “time in quantum mechanics is a Newtonian time, i.e., an absolute time. In fact, the two main methods of quantization, namely, canonical quantization method due to Dirac and Feynman’s path integral method are based on classical constraints which become operators annihilating the physical states, and on the sum over all possible classical trajectories, respectively. Therefore, both quantization methods rely on the Newton global and absolute time. The absolute character of time in quantum mechanics results is crucial for its interpretation, i.e., matrix elements are evaluated at fixed time (dubbed “filter” below - D.C.), and the internal product is unitary, i.e., conserved in time, and it implies conservation of the total probability. Therefore, time is part of the classical background, which is needed for the interpretation of measurements.”

Fine, but again, is the quantum coin \( (1/2,1/2) \) located anywhere on any light cone, including those that are space-like separated from B ‘here and now’? Read Erwin Schrödinger from 1935:

In general, a variable has no definite value before I measure it;
then measuring it does not mean ascertaining the value that it has.

Therefore, the quantum coin \( (1/2,1/2) \) cannot have definite values, neither before nor after (Sic!) we measure it. Surely the quantum coin has two physicalizable “jackets” (read below), either ‘heads’ (1,0) or ‘tails’ (0,1), and these “jackets” produce real physical effects. Yet their common ‘coin’ \( \{|1>,|0>\} \) cannot be observed, as we know since 1911 (Slide 7).

But again, is the quantum coin \( (1/2,1/2) \) anywhere on any light cone? If not, where is it?

Plato suggested the answer twenty-four centuries ago. In modern parlance, the inevitable non-definiteness of the uncolored Kochen-Specker sphere (Helena Granström) is noumenal ‘monad without windows’ (Leibniz). It defies any mathematical logic: we cannot determine whether a proposition about Das Ding an sich is ‘true’ or ‘false’, because the Noumenon itself does not have any ‘windows’ (cf. (iii) below). Read p. 30 and p. 44 in ‘Platonic Theory of Spacetime’ from 4 November 2018 at my website. Both the quantum coin and the Schrödinger cat exist ‘out there’ as Platonic reality known as Res potentia. The Moon (David Mermin) also exists ‘out there’, but as physical reality of ‘facts’ (Res extensa), placed only in the past light cone A. Thus, every physical fact “definitely either is or is not” (Erwin Schrödinger, 18 November 1950).

The Platonic Res potentia neither is nor is not. It is a different kind of reality, “just in the middle between possibility and reality” (Werner Heisenberg). It quietly resides “inside” the null intervals, that is, “between” photon’s emission and absorption (Kevin Brown). It communicates with the physical world once-at-a-time (Slide 7), as recorded with a clock — only at the event B ‘here and now’, and only by its physicalizable “jackets”. Forget about those mythical “qubits”. 
The generic quantum state \(|1>,|0>\) is Platonic Res potentia (see again Slide 7). It cannot be manipulated over a finite (not zero) time interval by any inanimate (dead) object. The physical world at the length scale of tables and chairs can “filter” (Sic!) only the point-like “jackets”, either ‘heads’ (1,0) or ‘tails’ (0,1), but never \(|1>,|0>\). It is impossible in principle to employ and control the unobservable, intact, and atemporal quantum state \(|1>,|0>\) solely from its fleeting physicalized “jackets”. Sheeple can only play with “quantum error correction”. Other sheeple, mostly at CERN, are trying to assemble the proton solely from its “jackets” (Slide 10), until they fail and declare proton’s unobservable, intact, and atemporal quantum state “dark”.

This is the physics of life (Erwin Schrödinger), without the ‘verdammten Quantenspringerei’ (idem, p. 9 in FRAUD.pdf). The “quantum jumps” are inevitable artefacts from the “filter” above. Dead matter makes quantum jumps; the living-and-quantum matter is smarter. RDFM.

Needless to say, the physics of life cannot be understood without gravity. Many people are brainwashed with the current textbooks in General Relativity, and will claim that gravity is classical phenomenon, because it always has definite values, both before we measure it and after we measured it. But what makes up ‘gravity’ to become geometric, and not physical, “field”? What is the origin of gravity? Let’s try to find out what this phenomenon is not.

The origin of gravity is not some quantum phenomenon, like the quantum dice above, but the origin of gravity is not some force field either: read the first paragraph in p. 45 and follow the links. Surely the physical contributions to gravity, placed in the right-hand side of Einstein field equations, have always definite values, like the ‘heads’ (1,0) and ‘tails’ (0,1) above, but the left-hand side contains an entirely different, neither quantum nor classical, animal. Many people consider “intuitively clear” to interpret this brand new object as ‘pure geometry’, like the grin of the Cheshire cat without the cat (p. 15), but here’s the catch: “There is no spring or sink everywhere (emphasis mine - D.C.) in spacetime for matter (particles’ plus electromagnetic field’s) energy-momentum” (Zhaoyan Wu), which could be reserved exclusively for gravity, so that gravity could employ such “spring or sink” to interact with matter and fields, say, with a plastic bottle (p. 21) or with “a bead on a stick” (Richard Feynman). We face the same puzzle in the physics of the human brain: if the mind were able to interact with brain’s tissue, then the mind will be a bona fide physical field. But how could geometric things interact with matter?

The only possible solution — Gravity-Matter Duality — requires Platonic theory of spacetime. The quantum-gravitational Res potentia does not live anywhere on the light cone, but only “inside” (pardon my French) the event B ‘here and now’. We can observe only its physicalized “jackets” (p. 3 in CEN.pdf), and only post factum (A2 in Slide 19 in Quantum Spacetime), only after they were cast in our past light cone A — one-jacket-at-a-time. We may detect these gravitational “jackets” iff their detector is endowed with self-action, just like the self-acting human brain. Forget about the fake “GW astronomy”. We need Quantum Gravity. Welcome aboard and RDFM.
If you are not interested in Mathematics and theoretical physics, and are only curious about the basic principle of the physics of life, check out p. 4 and the continuum on p. 39 in the “manual”. The quantum-gravitational, atemporal, and pre-geometric Res potentia springs “within” every geometric point/event, that is, “between” photon’s emission and absorption (Kevin Brown). Its duration, recorded with a physical clock, is zero — read the Greek story on p. 31 therein. In the so-called Arrow of Space (p. 7), time comes from both ‘change in space’ (the coordinate time, recorded with clocks) and ‘change of space’. The latter is completely nullified, being “inside” every geometric point/event. Hence we have perfect (Sic!) spacetime continuum in the light cone, whereas the Platonic Res potentia is shifted to the potential future (see the carrot below). It is accessible only to the living and quantum-gravitational world (p. 7). All you need is a brain. You don’t have to learn exotic techniques like meditating on a rock or solving differential equations: spacetime engineering works like a black box (p. 43; see also Slide 14).

In a nutshell, every next event ‘here and now’ along the Heraclitean flow of events is jointly determined by its irreversible history and potential future. This new form of retarded causality (the cause and its effect are timelike separated) was called ‘biocausality’ in January 1990. The potential future (the “carrot” above) is, of course, Res potentia. It is always flexible (p. 33), and we can practice spacetime engineering effortlessly (p. 38), by altering the phase of the “carrot”. It (not “He”) is atemporal pre-geometric Res potentia, resembling a single geometric point stretched to infinity. It does not have metric, so it is neither “small” nor “large”, just as we cannot measure the Platonic ideas of a tree and a mountain, to find out which one is larger or heavier. It is simply ‘the grin of the Cheshire cat without the cat’ (p. 15) and ‘that which has no part’ (Euclid). Just like the human thoughts, it has no mass and no inertia. All humans have access to the mental correlates (qualia) of Res potentia, and these correlates build up our subjective world called Res cogitans, whereas the inanimate quantum-gravitational world is only bootstrapped by its Res potentia. If we get access to the “carrot” of steam turbine rotors in nuclear power plants and to its mental correlates (qualia), we should be able to “swing” the entangled (Sic!) carrot-and-rotor by gravitational rotation effortlessly (p. 35) and produce electricity without water supply, steam, or hazardous nuclear fuel. It shouldn’t be a problem to rotate a chunk of metal — gravity can effortlessly rotate a whole galaxy en bloc. This is just one possible application of spacetime engineering. Many people may not like it, but recall that the only available alternative would be to invest every year €180 billion in renewable energy, energy efficiency, and clean transport until 2030 (p. 38). That’s €2.16 trillion. Read my mind.
In summary, we can evoke the appearance of various physicalized “jackets” (p. 3 in CEN.pdf) of Platonic Res potentia at macroscopic length scale, producing unlimited and perfectly clean energy (pp. 38-45): read p. 9 in Gravity-Matter Duality. If the gravitational rotation above seems a bit too exotic, recall the quantum vacuum (Peter Milonni): “all fundamental fields, such as the electromagnetic field, must be quantized at each and every point in space” (Wikipedia). Fine, but each and every point in space acts like a “filter” (read above) for physicalizable “jackets”, and this “filter” irreversibly eliminates the Platonic Res potentia, depicted with the “carrot” above: the relation between QM operators and ‘points in spacetime’ is like one-way street, in the sense that we cannot recover the hypothetical ‘quantum state’ from its point-like “jackets” cast by the quantum coin \{|1>, |0>\} above. With spacetime engineering, we can avoid those “quantum jumps” (Erwin Schrödinger) and access the intact complex phase of what we call ‘virtual particles’, then carefully tweak it and evoke the appearance of real physical stuff at macroscopic length scale. The latent energy pool stored in the vacuum is just mind-boggling. For example, if we could somehow capture all energy from GRB 080916C and convert it into electricity at 100% efficiency, it will supply the entire planet for 13.10^{27} years (Wikipedia). The trivial law of energy conservation is not applicable here (Paul Steinhardt): the physicalized part of the Universe is not ‘isolated system’, because it is coupled to Platonic Res potentia. I have suggested a new equation, dubbed ‘evolution equation’, but it is still in symbolic form (p. 40). We need new Mathematics and new presentation of ‘zero’ (Macavity), in the first place.

Many sheeple strongly oppose my proposal and ignore it, but that’s quite a different matter. As of today, people can tweak electronic devices, freeze water (p. 19), and fly in the air over the streets of London. There is no sense to keep silent and pretend that this is some weird “magic” that should be studied only by special government agents behind closed doors. The underlying phenomena are known since 1911, thanks to Charles Wilson (Slide 7), and were studied by Erwin Schrödinger in 1935. There’s no “magic” in chemistry (p. 44), right?

Finally, I wish to explain why I wrote this paper. Back in November 1989, I completed my first manuscript on the physics of life, entitled: ‘How to Bind Mind to Matter?’ . It was dated 15 January 1990, to mark eighteen years of study and research, which I started in January 1972, at age 19. I am old and probably won’t be around to witness the devastating climate catastrophe, but many younger people, including my loved ones, will. I feel like being brutally forced, along with my children and grandchildren, to take a seat in a rubber boat, surrounded by a bunch of crazy idiots, who enjoy rafting on a mountain river toward a gigantic waterfall a few kilometers ahead (p. 38). I can only shout at these morons to stop immediately our boat, before it is too late. For if we pass the tipping point, we will be dead close to Climageddon and WWWIII. Don’t even think that WWWIII cannot happen because governments were “smart”. They are not.

Now, thirty years ago, I was speculating about the physics of life and quantum gravity, but nobody showed any interest, maybe because these issues looked purely academic. But now the situation is totally different (p. 45). We all are in the same ‘boat’, but we’re not building clean energy anywhere near fast enough: “At this rate, it’s going to take nearly 400 years to transform the energy system” (James Temple, MIT Technology Review, 14 March 2018). Forget it. Read Bjorn Lomborg below.

What will you do, my dear reader? Do you care about your kids? They will have miserable life. Don’t say that you see nothing, hear nothing, know nothing, and keep rafting on Niagara River.

There is no alternative to the proposal for clean unlimited energy from March 1994 (p. 9). This is what Mother Nature does, by unleashing mass-energy from the quantum-gravitational vacuum. This is how the Universe was created by itself (read below) at the Beginning (John 1:1). RDFM.
ADDENDUM

I believe it is not entirely impossible that one day in the distant future there will be people interested in Platonistic theory of spacetime, and they will be studying the ‘manual’. But before diving in the details, such as the so-called hyperimaginary numbers, the atom of geometry, Finite Infinity (Fl), Maximal Set Theory (MST), the doctrine of trialism, physical theology, and the evolution equation (still in symbolic form), you should know whether it is worth your time. As a friend of mine put it (Stavros, p. 31), “But where’s the beef? And what can I cook from it?”

Perfectly reasonable questions. Let me try to answer the first one and suggest what you could ‘cook’ from Platonic theory of spacetime. Needless to say, I offer my personal, and perhaps strongly biased, opinion. Take it with a grain of salt.

There is an enormous, perhaps unlimited, treasure ‘out there’, and we only need a navigation map to find it. This ‘map’ is our theory. Let me show you ‘the beef’: the Platonic Res potentia (read above). It is not physical reality (Res extensa) nor mental thing (Res cogitans). It creates and controls the entire physical world (p. 26) modeled as ‘Brain of the Universe’. Keep in mind that there are three very different “components” of what we call Platonic Res potentia (p. 11): (i) the observable and physicalizable “jackets”, such as the ‘heads’ (1,0) and ‘tails’ (0,1) above, (ii) their unobservable, intact, atemporal, and pre-geometric source (‘the matrix’, p. 5), and (iii) the noumenal ‘monad without windows’ or Das Ding an sich. The latter is ‘non-reality’, and it (not “He”) is not comprehensible with human cognition (the Eskimo, Slide 14). It can only be described mathematically (p. 30), hopefully.

Regarding (i), recall that in QFT we can have “superposition” of |cat> + |dog> (Erich Joos), whereas their sub-quantum matrix (cf. (ii) above) covers all possible ‘animals’. Hence we can suggest (not define) the undefinable matrix pertaining to ‘the Universe as ONE’ (pp. 29-30). A simple illustration of the “jackets” (i) is offered with their mental correlates (qualia): check out the experiment, which you can perform with your brain, at p. 2 in Hyperimaginary Numbers. The matrix (ii) is demonstrated on p. 3 therein and also in Slides 10, 11, and 12 from Quantum Spacetime. It cannot in principle be located on the light cone. In this sense, the self-acting matrix is “dark” (Macavity), as it cannot be traced back from its gravitalized “jackets” above.

In fact, none of the physicalized explications of ‘time’ (Arthur S. Eddington) can be used to trace back their common source — ‘that which moves without being moved’, Aristotle. Just like Macavity and the ‘monad without windows’ (iii), the self-acting Unmoved Mover cannot be located on the light cone, which is what makes it “dark”. Otherwise it will be at absolute rest and will fix an absolute physical reference frame, contrary to the theory of relativity (p. 31).

These are the facts, to name a few. What can you ‘cook’ from them? Save the planet, of course!

Bjorn Lomborg warns us that even “if every nation fulfills every promise by 2030, and continues to fulfill these promises faithfully until the end of the century, and there is no ‘CO₂ leakage’ to non-committed nations, the entirety of the Paris promises will reduce temperature rises by just 0.17°C by 2100.” The 2015 Paris climate agreement cannot achieve its goal. No way. Not even if we manage to squeeze our budgets and produce €2.16 trillion until 2030 (read above).

The only possible solution — spacetime engineering — is in your hands.

D. Chakalov
chakalov.net
EXPLANATORY NOTE

The “components” of what we call Platonic Res potentia, (i) - (iii) above, and their exploration with spacetime engineering (read above), need an KISS explanation. I will assume that you’ve read the abstract at this http URL and will try to explain the first, and perhaps most challenging and “counterintuitive”, proposition in Platonic theory of spacetime: the vacuum. Let me start with the quantum vacuum, and later will explain the so-called cognitive vacuum. Finally, I will refer to the doctrine of trialism (Slide 14) to suggest cognitive-and-quantum vacuum, which is the crux of spacetime engineering.

Unlike technical vacuum (e.g., the absence of oxygen in light bulbs), the notion of ‘vacuum’ in theoretical physics still doesn’t have mathematical presentation: the trivial idea of ‘empty set’ is defined relationally, with respect to ‘something that is absent’, whereas we need a brand new notion of non-relational or “absolute zero”, as in the case of Macavity at this http URL. Physically, we can detect only various “jackets” cast from/by their common source: the matrix (see (ii) above), dubbed also ‘John’. Physically, the matrix is ‘vacuum’ defined as non-relational or “absolute zero”. Recall also the still-not-squared quantum wave amplitude (KhanAcademy):

It is not ‘physical reality’ (read above). It is the “absolute zero” of Macavity: a temporal Platonic Res potentia (read above), dubbed ‘the matrix’ — see (ii) above. Physically, it is just ‘vacuum’.

To avoid misunderstandings, let me explain what the matrix is not. Back in 1970s, I would go to the National Library in Sofia, say ‘hello’ to the librarian there, and ask for particular book. After a few minutes, she would bring the book and give it to me, under the condition that I will read it only in designated reading rooms there, and by the end of the day will give it back to her. Sure enough, the same book was somewhere in the library, at some exact place. This is the physical ‘structure’ (not matrix) of the library, thanks to which every book can be retrieved. (Recall the insoluble problem of ‘structured information’ in artificial intelligence (AI), which is not present in cognitive vacuum, as I will explain later; see p. 2 in Hyperimaginary Numbers).
Now, what would the library look like, if it were ‘vacuum’ governed by its **Platonic matrix**? We can only *evoke* the appearance of *physicalized* “books” or “jackets”, but we can never see the library/vacuum itself, nor the still-*not*-squared quantum wave amplitude of any “virtual”, yet to be physicalized, book/jacket. It will make to sense to “count” the *physicalizable* “books” in such vacuum-like library. There is no ‘librarian’ either. Yet we can easily *evoke* the appearance of our desired “books”, thanks to their *atemporal* matrix: see p. 3 in *Hyperimaginary Numbers*. To understand how the *atemporal* Platonic matrix works, see Slides 10 and 12 from *Quantum Spacetime*. In the living world (Slide 11 therein), *the same* matrix works flawlessly as well. Suppose, for example, that you are slicing onion with a kitchen knife and accidentally cut your finger: you put a plaster on it to heal faster and after a few hours it won’t bleed, and on the next day your skin will recover completely. Trivial, you may say, but recall that there is no computer and *custom-made software application*, which can be inserted in every *skin cell* to execute such process, *just* in case you cut your finger. That would be like retrieving books from the physical library above, based on the physical *structure* of the library. Thus, the biological and quantum *matrix* are ‘John’s memory’ stored in the ‘vacuum’: we observe only its ‘jackets’.

But what is ‘cognitive vacuum’? Try the experiment at p. 2 in *Hyperimaginary Numbers*. Its cognitive *matrix* produces invariant ‘meaning’ among all people, despite the differences in the structural and functional organization of their brains viz. their different neurophysiological “jackets”. This cognitive vacuum doesn’t change alongside your aging body: for example, once you remember the *meaning* of ‘apple’, you will always keep it in your *atemporal* memory. It is not made from the elements in the *periodic chart*, so it cannot be eaten by worms, after you drop down your deteriorated “jacket” (get off the train, p. 31). It *always* produces the *qualia* from its biological and quantum-gravitational matrix, and works like a *black box* — read above.

All you need is to apply the doctrine of *trialism* (Slide 14) and suggest two complementary types of ‘vacuum’, called cognitive-and-quantum vacuum, and you’re done. Namely, you’ll have to *bridge* your chosen quantum-gravitational matrix with the matrix of your *brain*, and the latter will offer you a new mental *correlate* (* quale*) from this ‘bridge’. Then you can work with it and practice *spacetime engineering*, just as if you’re learning a new motor skill. It is called learning. Simple, isn’t it? Check it out with the exercise below (p. 8 in HBP.pdf), which involves only the biological matrix of your *brain* and its complementary cognitive matrix.

Imagine a cube made of some white plastic material, with 3 cm rib, painted blue, which you cut into 27 little cubes, 1 cm each, and ask yourself the question: how many little cubes have 3 painted sides, 2, 1, and zero?

Compare this exercise with the demonstration by Flavian Glont, who can arrange approximately 43 *quintillion* ($43 \times 10^{30}$) permutations of the Rubik Cube blindfolded: watch *6:33 to 6:38* below and noticed that at the end he was “looking” (Sic!) at cube’s *cognitive matrix* for nearly 2 sec.
To reach the quantum-gravitational matrix and its complementary cognitive matrix, you don’t have to learn and master any special skill — only the Platonic theory of spacetime (p. 38), to give you access to the atemporal ‘bridge’ above. It is not “magic” nor yoga (p. 43). It is based on the physics of life and the only possible theory of quantum gravity (p. 4).

What can we produce with spacetime engineering? Enhanced nanotechnology and natural healing, for example, may require the same effort as in rotating the mental cube, “looking” at it, and counting its colored sides. But most importantly, we can save our planet, right now!

Finally, let me elaborate on the main premise in the physics of life, stated by Erwin Schrödinger in February 1943: “We must be prepared to find a new type of physical law.” The physicalized section of the Universe is incredibly fine-tuned to life, as if it had known how to get organized, even from the Beginning, in order to raise living organisms billions of years later. The doctrine of trialism (Slide 14) offers the alternative to the so-called anthropic principle: matter and psyche spring from their common source, in such way that the only possible organization of matter is also the optimal one, to both matter and psyche. The ‘probability mechanism’ of physics is totally inadequate. It makes no sense and only leads to reductio ad absurdum.

As Fred Hoyle once remarked, the random emergence of even the simplest cell matches the likelihood that “a tornado sweeping through a junk-yard might assemble a Boeing 747 from the materials therein.” This is why we need the Platonic Res potentia viz. the matrix common to quantum-gravitational and living systems: God casts the matrix, not the dice (p. 26). Check out Slides 10, 11, and 12 from Quantum Spacetime. Once we uncover the quantum-gravitational matrix, which guides the creation of positive energy only, and never ‘negative mass’, we will know how to mimic Nature and produce unlimited clean energy with spacetime engineering.

This is how we can save our planet and avoid Climageddon and WWII. Ignore it at your peril.

D. Chakalov
chakalov.net
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P.S. A friend of mine (p. 31) asked recently whether he could learn spacetime engineering without the hassle of reading “your crazy stuff”. Suppose you wish to learn how to juggle three balls: watch the ‘manual’ at YouTube. However, suppose you cannot see the balls, and actually have three spoons at your disposal. You only believe that you’re dealing with balls, but they are in facts spoons. Then suppose you believe that you will be tossing balls (not spoons) in the air, but you have feedback from your legs only, because you are blindfolded and can’t see anything. You try to move your arms and toss the balls in the air, but in fact you’re moving your legs and kicking three spoons on the floor. What skill could you achieve without that “crazy stuff” above? Try meditating on a rock instead.

Anyway, if you are only vaguely curious about spacetime engineering, and are not interested in any (very important) details, I can certainly try to explain it. I’d like to imagine that you are a gorgeous sexy lady and we are casually chatting in a French restaurant over a glass of wine or five. (This hasn’t happened so far, but maybe one day it will — we can never know the future!)
Suppose we have a bunch of apples here on the table:

![Apples](image)

The bag above is what we call a ‘set’. The bag is not made of apples, so we can “remove” it and replace it with ‘knowledge’. Knowledge of what? Apples, of course. (Here I’d be tempted to ask whether she has heard of QM, because some people like Niels Bohr avoid physical apples and try to replace them with ‘knowledge’ of {1,0}, but I guess she won’t be interested.) Suppose that there is a holistic phenomenon in our world, which we try to explain by saying ‘the whole is something else than the sum of its parts’ (Kurt Koffka). Namely, the thing we’d call ‘bag’ is the ‘wlohe’: read the text in Slide 11. It is like a holistic forest made of trees, in the sense that every tree is feedback-influenced by the entire forest en bloc. Thus, the trees (not the apples above) are what they are (i) partly because of their physical structure, and (ii) partly because of their holistic forest. The latter keeps the matrix (p. 33) of all trees. What is ‘matrix’? Do you know how to slice onion with a kitchen knife? Let me explain (read above). This is the matrix. Once you catch it with your brain, you will experience it as ‘knowledge + something else’, and will be able to alter the physical state of every tree via its forest/matrix. Simple, no? Cheers!

If you wish to learn more, check out Yakov P. Terletskii and Max Tegmark at this [http URL](http://example.com). The global “time” of John (pictured here) is always zero (p. 14). William G. Unruh and Robert M. Wald examined this nondynamical “time” in October 1989 (Time and the interpretation of canonical quantum gravity, *Phys. Rev. D* 40 (1989) 2598-2614). Adam Helfer called it Macavity. It (not “He”) is not ‘physical reality’ and therefore cannot exist on the light cone (read above). Physically, we can see only its “jackets” or “shadows”, as Plato suggested many centuries ago (p. 11). At the inanimate macroscopic world, modeled with classical physics, the bootstrapping effect of the ‘bag’ above is miniscule: the matrix (see (ii) above), stored in apples’ “forest”, offers only infinitesimal flexibility to the “donkey” above. This trivial case is labeled Case I in Table 1, p. 14 in *The Spacetime*. The living and quantum-gravitational world is smarter (p. 40).

As of today, the only reaction to my proposal for unlimited clean energy (p. 9) came from my kids: stop banging your head against a wall. I’m afraid this advice holds also to Bjorn Lomborg. Nobody cares. Nobody. There is nothing I can do to avoid the upcoming climate catastrophe. Will wash my hands of it and try to ‘leave the boat’, along with my family, as soon as possible.

I wish all my readers (if any) a very happy and joyful Christmas.

D. Chakalov
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Last update: 22 December 2018, 14:30 GMT
THE DOCTRINE OF TRIALISM

Matter gives Mind life and cognition; Mind gives matter the arrow of Time — Der Geist bewegt die Materie, Virgil.

The doctrine of trialism (p. 8) was suggested by the author of these lines in April 2000. It may be “counterintuitive” (p. 44), because it blends the proposal by Plato (p. 11) with the phenomenon of dualism (e.g., wave-particle duality). Here’s a brief explanation.

Suppose you are Eskimo. You have never seen and will never see an elephant in your life, yet you can make observations on elephant’s trunk with two devices measuring either properties of your arm or properties of your nose.

You can never imagine the common source of your arm (Res cogitans) and your nose (Res extensa), which you blindly called “trunk” (Res potentia), because the latter does not have arm-like windows nor nose-like windows: it (not “He”) is ‘the true monad without windows’ (Leibniz, Monadology §7). You may suggest, after Leibniz, that what you see as ‘arm’ (Res cogitans) is always pre-correlated with what you see as ‘nose’ (Res extensa) by pre-established harmony. But again, you’re Eskimo and can never imagine the ‘trunk’ (Res potentia), thanks to which, even at the Beginning, the ‘nose’ (Res extensa) had already “known” exactly how to get organized in order to raise biological organization of matter equipped with ‘arm’ (Res cogitans) billions of years later (details above). In this sense, the biological organization of matter acts like “filter” for life and facilitates the emergence of mind and cognition at macroscopic scale.

To understand the notion of ‘windows’, recall that a physical library always has ‘windows’, thanks to which every book in it can be retrieved (read above). If the vacuum (Peter Milonni) were made of physical particles (like books in physical library), its energy density would be $10^{113}$ joules per cubic meter (Wikipedia): “the worst theoretical prediction in the history of physics!” (M.P. Hobson et al.) Ditto to Res cogitans: there are no ‘windows’ to what we call Noetic world, because we face here the UNSpeakable cognitive vacuum. We can always pull out particular ‘meanings’ from the cognitive vacuum (read above), yet it (not “He”) is cognitive-and-quantum vacuum, or simply ‘trunk’. It makes the so-called ‘bridge’ in spacetime engineering (pp. 38-45). Which means that we can employ the existing matrixes (read above) or create new ones at will.

Yes, we have unlimited pool of physicalizable energy stored in the ‘trunk’. Yes, we can save our planet and avoid Climageddon and WWII. Don’t ever say that you knew nothing about it. Period.

As to the doctrine of trialism itself, feel free to denounce it by suggesting any solution different from the dual “trunk” above. You will face the insoluble problem with infinite regress, known as ‘turtles all the way down’. Aristotle was fully aware of it: recall the Unmoved Mover (iii) above. Physically speaking, the Unmoved Mover makes ‘the Universe as ONE’ self-acting (read above).
This is how the Universe was created by itself at the Beginning (John 1:1). Theologians would argue that the solution to ‘turtles all the way down’ is some ultimate limit, which we call God (Luke 17:21) and interpret as Love (1 John 4:8). This means that Nature has only one limit to ‘turtles all the way down’, which can be envisaged only from the ‘arm’ (Res cogitans) above. Physicists would argue that the ultimate limit does not lead to God but to Aristotelian Unmoved Mover, which can be envisaged only from the ‘nose’ (Res extensa) above. But here comes the third solution: the ‘limit’ has dual nature, and both theologians and physicists are right. Why? Because we’re Eskimos. We need new Mathematics (p. 18) to present the Unmoved Mover as purely mathematical concept. We could not prove the existence of ‘unmoved mover’ with any mathematical theorem, because its operational definition will involve undecidable propositions, which are neither provable nor refutable, as in Gödel’s theorems. Thus, we can only claim that the doctrine of trialism unites the aspirations of theologians and physicists, and stress that any effort to understand Nature is ultimately rooted on belief. It is the ultimate cutoff on human cognition. For if Nature was infinitely comprehensible, we would be asking questions about its origin, purpose, reason, etc., ad infinitum (p. 30). Thank God, this is impossible.

Taking again the risk to be very boring, I will briefly outline the origin of trialism: the topology of spacetime, based on two complementary types of ‘infinity’, actual/completed and potential. The latter is demonstrated with infinite regress, commonly known as ‘turtles all the way down’, whereas the former is used in calculus to infer — but never prove — the existence of ‘limit’. As explained in Wikipedia, “In mathematics, a limit is a guess (emphasis mine - D.C.) of the value of a function or sequence (...).” Recall the story about bartender’s guessing (p. 15) below.

An infinite (actual infinity) crowd of mathematicians enters a pub. The first one orders a pint, the second one a half pint, the third one a quarter pint... “I understand”, says the bartender — and pours two pints.

We all can understand the notion of limit at which we must ‘stop there’, but cannot rigorously prove it, because potential infinity is based on infinite regress, which does not ‘stop’ anywhere. Thus, we believe that the two types of infinity complement each other (recall the wave-particle duality) and use them en bloc. To cut the long story short, the alleged Archimedean numbers, which do not contain infinitesimals and hence present one single geometric point, cannot exist. Check out the real number line on p. 39, Finite Infinity (FI) on p. 3, the ‘atom of geometry’ on p. 17, and the discussion on p. 44.

Going back to the doctrine of trialism: the “two” limits, which theologians and physicists suggest either from the ‘arm’ (Res cogitans) or from the ‘nose’ (Res extensa) above, are fused in one dual limit, which is not comprehensible to Eskimos. It will be useless to argue whether the ‘trunk’ is God or ‘the Universe as ONE’. It’s both. It exists “inside” us (Luke 17:21), by the virtues of actual infinity (cf. the holistic forest above), yet it cannot be physically reached due to potential infinity, not even with Gedankenexperiment. All our efforts to understand Nature are ultimately rooted on belief. We can argue that Nature is smarter than Eskimos, but this statement is also based on belief. We cannot completely overlap ontology and epistemology. Thank God, this is impossible.

You may again ask, do we really need all that “crazy stuff”? The choice is yours — read above.

D. Chakalov
25 December 2018
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As of today, 6 January 2019, over 53,362,291 people have watched the disgraceful ‘Gravity Visualized’, posted at YouTube seven years ago, on 10 March 2012. Worst of all, this fake “visualization” was offered to kids (Sic!) at Los Gatos High School in Los Gatos (CA), by Dan Burns, their high school physics teacher and lead mentor for the Physics SOS workshop.

Don’t lie to kids, Dan. You may be awarded Nobel Prize, as it happened to Kip Thorne and his collaborators, but you will commit a very serious sin. It is widely known that one cannot explain gravity by using gravity, as Pepe (certainly not high school student) noticed one month ago. It will be like “explaining” heat (read here) with some tiny little and very “hot” particles (p. 41).

Suppose you are bartender and you know nothing about gravity. You will, however, notice the black clothespins, which straighten the blue elastic fabric and define the “edges” of spacetime viz. the entire Universe as isolated system, like the accelerated rocket at Einstein-online.info.

Do you smell a rat? Is the blue ring above ‘isolated system’? How will you install gravitational-wave (GW) “mirrors” at the “edges” of spacetime? I will explain the unsolved problems with gravity and inertia right after the demonstration scheduled for the end of May this year (p. 40).

D. Chakalov
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QUANTUN “SUPERPOSITION” OF CLASSICAL STATES IS OXYMORON.

Quantum Computing Expert Fakes One Concept in 5 Levels of Difficulty
Published on YouTube on June 25, 2018

Read Erwin Schrödinger from 1935 above and from 1950 at this http URL. The PR stunt by IBM with some “fourth-generation 20-qubit machine” is just crap. Recall their insane error (quote):

Unlike traditional bits, which can be set to “one” or “zero,” qubits can take on both values at once, or a proportional mixture of the two (scientists call this “superposition”). If you have two qubits, you can test four possible outcomes simultaneously (0-0, 0-1, 1-0, 1-1). Qubits are also aware of each other (Sic! - D.C.) -- a phenomenon known as “entanglement” -- which helps the computer to arrive at an answer.

All qubits \{|1>, |0>\} must have ‘knowledge’ (read above) of each other, in order to be “aware of each other” during (Sic!) their entanglement (Johannes Beil), as recorded with a physical clock at macroscopic scale. The problem is known since 1911, thanks to Charles Wilson (Slide 7).

Forget it. The matrix (read above) cannot be reproduced with any “quantum computer”, ever. It doesn’t matter if you freeze the “quantum processor” within thousandths of a degree of absolute zero. Those “quantum computing experts” will have to fuse the atemporal Platonic ‘quantum state’ with the time parameter in Special Relativity, which is absurd. Yet tens of billions of dollars/euros/yuan are already invested by the ‘good guys’ to hack the encrypted communications of the ‘bad guys’, and even more will be wasted in the future. Ridiculous.

Get real, sheeple!

D. Chakalov
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