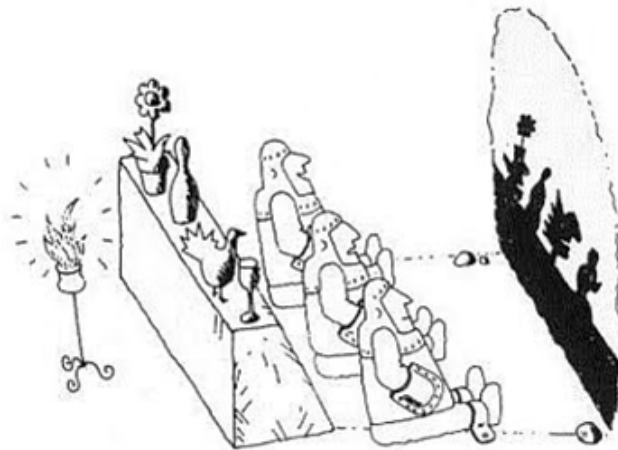


The Fifth Force: Proof of Concept (text version)



Yes. This was me four year ago, on 23 September 2018. I announced the paper version of the main report, titled *Platonic Theory of Spacetime*. The report is available at my [website](#). I elaborated there on the proposal about the Platonic world as 'the common source of matter and psyche' (Gottfried Leibniz called it *the monad without windows*), suggested on 23 March 1994.



Dimi Chakalov, [23 March 1994](#), 9:00-9:20 CET. Talk at the *Conference on Science and Theology* (ECST V) in Freising by Munich, March 23-27, 1994.

Notice that the three "chained" guys not only cannot "turn around" and look *directly* at the Platonic world, but also belong to the Flatland of the "shadows" on the wall, like animated 2D images from a movie reel.



We are "shadows" from the 4D "movie screen" and the "movie operator" is a hypothetical *atemporal* state of the entire Universe, as suggested on 31 October 1989 in the official announcement of my research program: read *How To Bind Mind To Matter?* (January 1990) at my website ([Matter.rar](#)). Why *atemporal* "movie operator"? Because if he takes a coffee break and stops the movie, we will not notice any "gap" (p. 31) in our 4D "shadows".

After my announcement on 23 September 2018 (the first clip), I focused on the effects in the physical world, produced by the *invisible* (with [light](#)) Platonic world: read chakalov.net/history.pdf and chakalov.net/talk.pdf. Details at <http://chakalov.net/#reports>.

As an analogy, recall the images and sound we see and hear from a TV set: we know that they are not created by the TV alone. Replace the TV with your brain and ask the following question: what is the [physics of the brain](#), facilitating – [very tricky issue!](#) – the emergence of mind, consciousness, volition, and memory?

Look at your brain ([photo 2.jpg](#)): how come nothing goes wrong with its [86 billion](#) neurons and [trillions](#) of synapses? This is why I suggested on 23 June 2022 a new force of Nature – the *fifth force* ([talk.pdf](#) and [history.pdf](#)).

It (not “He”) has a very wide triple presentation. The fifth force is the force of Life ([Erwin Schrödinger](#)), as it empowers [all living organisms](#). It is also the force of Time as ‘[energy from geometry](#)’ ([Slide 1](#) and [Slide 2](#)), thanks to which we face the [asymmetry](#) of [past and future](#). Last but not least, it also delivers the [energy of gravity](#), still unexplained in [textbooks](#).

Let me now briefly explain the crux of the fifth force: a new [self-action](#). Then I will proceed to the [proof of concept](#).

The [self-action](#) ([ball.mp4](#)) is *not* like [Baron Munchausen](#). Illustration with a kitchen glove: the [fifth force](#) makes all [four forces](#) [self-acting](#). No “mental energy”, no idiotic “[dark energy](#)”, no “[gravitational energy](#)”, and [no physical force](#) of the [arrow of Time](#). Instead, we have [self-acting](#) ‘gloves’ empowered by the [fifth force](#), like a ‘glove’ with [Platonic](#) ‘hand’ *inside* it.



The [monad](#) itself has no *windows* through which anything can enter or leave (Leibniz, [Monadology 7](#)). The [Platonic](#) hand has no *windows* either. We see only its 4D ‘glove’, and can deduce the existence of [Platonic](#) hand only from the [self-acting](#) faculties of its 4D ‘glove’ (p. 5 in [history.pdf](#)).

In this video, I will skip the [complicated issues](#) above and will proceed to the analogy with a ball ([ball.mp4](#)) and the [proof of concept](#), following my first video presentation *Spacetime Engineering 101* from [15 January 2020](#). No, spacetime engineering is not “[magic](#)”. You can learn it in two weeks or less, depending on your motivation. It will be like learning a new motor skill; for example, how to juggle three balls. [No special gifts](#) are needed.

Two years ago, a [friend of mine](#) asked whether he could learn [spacetime engineering](#) without the hassle of learning my “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 fact spoons. Moreover, 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 the three spoons on the floor. What skill could you learn without that “crazy stuff” (p. 3 in [talk.pdf](#))? Try [meditating on a rock](#), for at least 10 years.

To avoid further misunderstandings, I will clear the [most common](#) issues.

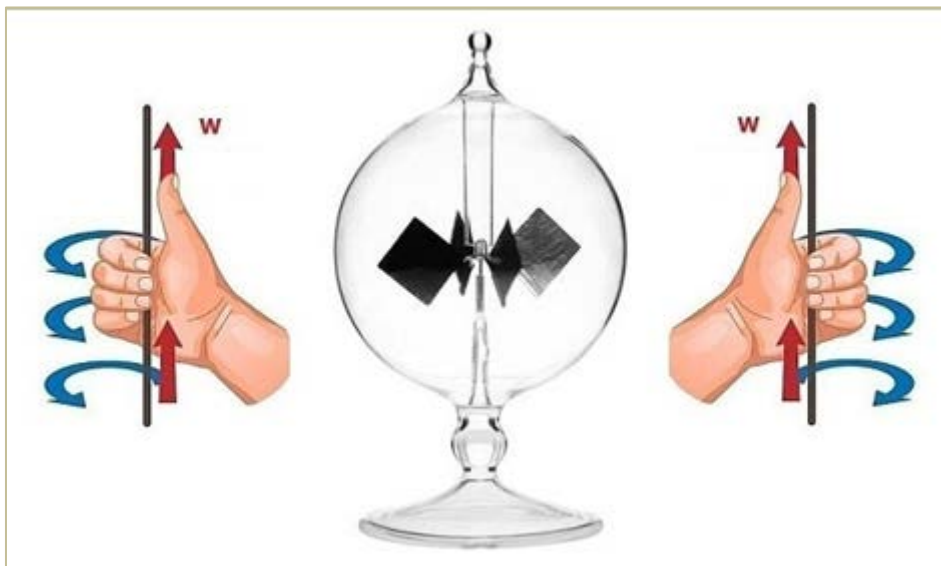
Recall the [first drawing](#): our [mind](#), [consciousness](#), [volition](#), [memory](#), etc., along with the entire physical world, are just 4D “shadows”. They must be *separated*, to preserve the ontologically distinct nature of mind & matter ([arm & nose](#)), but also *connected* ([Slide 1](#)), so that they can also [interact](#). The only way to ‘have our cake and eat it’ is with [two modes of spacetime](#) in the [arrow of spacetime](#) depicted below.



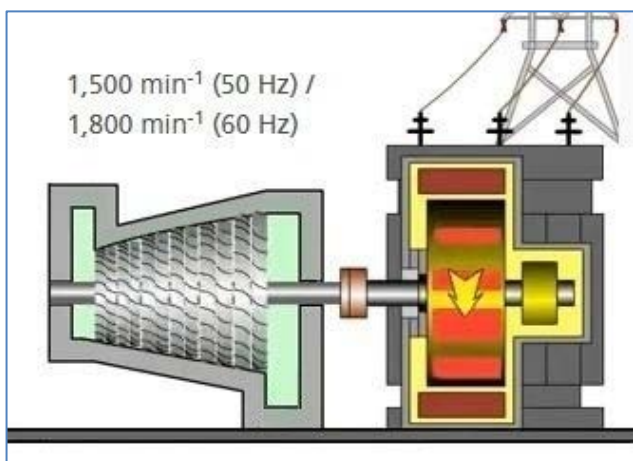
You only have to change your NEXT **future** state (“[carrot](#)”), and you’re done. Due to the “speed” of light, we [cannot see](#) the [atemporal](#) transition of the potential **future** into the irreversible **past**. With [light](#), we can see only the **past**, and only [post factum](#). Why? Let me quote from [Slide 19](#) in *Quantum Spacetime* (14 March 2017). Imagine that you stay in front of a wall: at t_1 you toss a ball at it, in such way that the ball will bounce back and hit you later at t_2 . You will be watching all the consecutive states of the ball during the entire interval $t_2 - t_1 > 0$. But you cannot replace the ball with a photon, because the **null interval** between its emission at t_1 and absorption at t_2 will be *exactly* zero: $t_2 \equiv t_1$ denotes a single 4D event ‘here and now’ cast in the irreversible **past**. Thus, when you watch the [billiard ball](#), you can see only its consecutive states cast in the **past**, which were “[already](#)” influenced by the [fifth force](#) — [once-at-a-Time](#) ([Slide 1](#)). With [light](#), we can’t see the NEXT **future** state (“[carrot](#)”) of the ball ([ball.mp4](#)).

This is how the **ball** is literally **acting on itself**, like the 4D glove **above**.

Let me show you the **self-acting** fifth force with the **Crookes radiometer**, without light source (flashlight): it can spin in both directions.



The magnitude of the fifth force here is immensely small, perhaps in the range of the **Casimir force**. Does the **fifth force** originate also from the **quantum vacuum**? Can we **scale it up** to spin the rotors in power plants?



My proposal for producing unlimited electricity is based on gravitational rotation, as gravity can rotate a **whole galaxy en bloc**. Just spin the steam turbine rotors in the **power plants** with **spacetime engineering**. There is no need for water supply, heat, nor **coal** or **nuclear fuel**. Is this possible? We urgently need **quantum gravity**!

Later next year, I hope to record the third (and last) part of this video at a technical lab in **Europe** or in Israel, under **tightly controlled** conditions.

Yes, the theory is **speculative**, like the **dubious map** used by **Christopher Columbus** in August 1492. But if he didn't go west, with the insane hope to find shorter route to the Far East, how could have he discovered America?

D. Chakalov
Christmas 2022

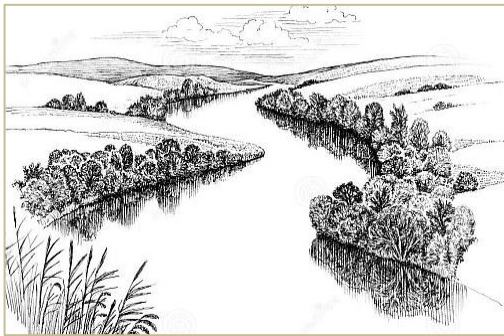
Reflections and Clarifications (RAC)

R1. There is no math in your theory.

C1. Nobody knows the math. I suggested new *hyperimaginary numbers* (**W**), denoting **Platonic objects**, which, “**when**” squared, yield **zero**: $W^2 = 0$. Read *Relative Scale (RS) Spacetime* [here](#). We need hypercomplex analysis.

R2. Your “**arrow of spacetime**” is fundamentally unobservable.

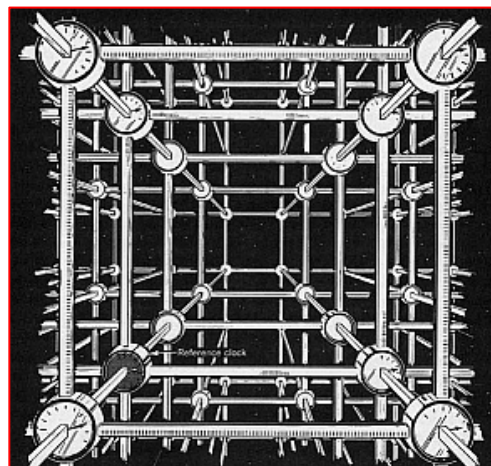
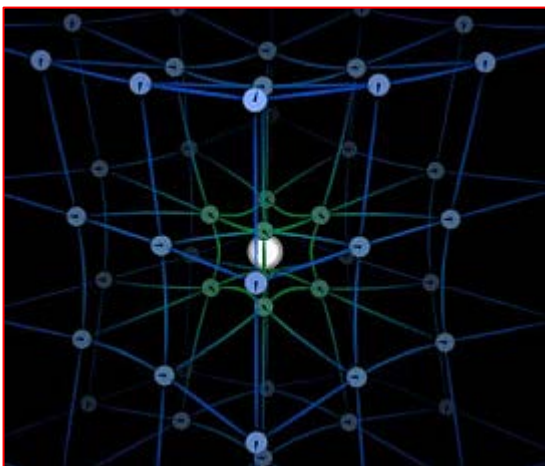
C2. True. With **light**, one cannot detect the *flow* of 4D events, called **Time**. The latter is simply *non-relational*. Otherwise the banks of Heraclitus’ river below will be physically real at **absolute rest**, like the **luminiferous aether**.



Everything changes and nothing remains still – you cannot step twice into the same stream.

Compare p. 15 in *The Fifth Force* ([talk.pdf](#)) with G.F.R. Ellis.

Yet the *flow of Time* does exist. We can always pick a reference frame at which a system is ‘**at rest**’, and in this sense it does not “**consume**” space. But the *flow of Time* will not perish: it will keep running. At what “speed”, however? One second per second makes no sense. Physicists have *no idea* what could **slow down** time and produce **gravity**: click the images below.



R3. What is the intended “third part” of this video?

C3. Reversible Elimination of Inertial Mass (REIM). No, REIM is not “magic”. Once you access the [spacetime matrix](#), you can fly your body just like you “move” your [thoughts](#), perhaps by tweaking the “[time field differentials](#)”. Watch a video from US Navy at [YouTube](#).



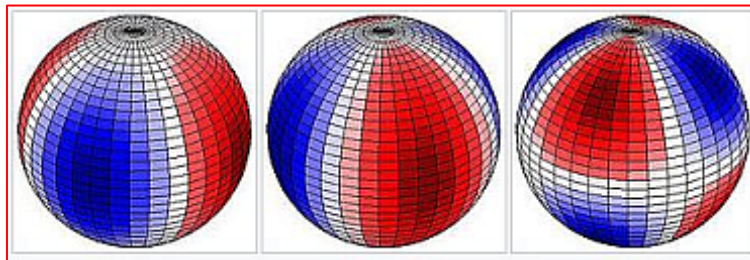
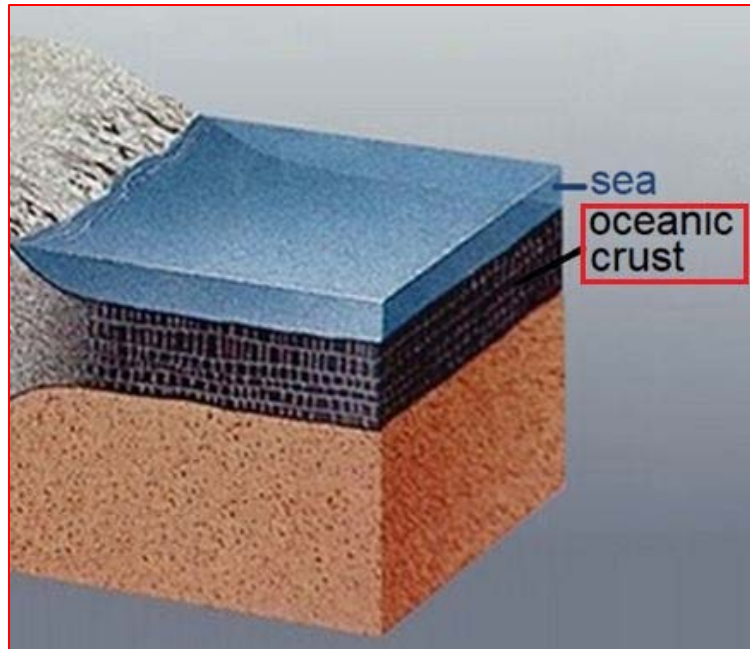
But how? Go Carol with $\Omega = 10^3$: p. 6 in *Relative Scale (RS) Spacetime* [here](#). As I mentioned [earlier](#), ‘one second per second’ makes no sense. Ditto to “3.3 nanoseconds” (E.F. Taylor and J.A. Wheeler) per 3.3 nanoseconds. But in [RS spacetime](#), the *variable rate* of Time can be inflated (for Carol) or deflated (for Bob), which *assembles* (Sic!) RS “different” domains of 4D spacetime. If the gimbal above was flying with $\Omega = 10^3$ (1km/sec) *relative to Alice* ($\Omega = 1$ or 1m/sec), she would consider it Alien Visiting Craft (AVC), but at the same time the gimbal will fly with its (quasi-local) speed $\Omega = 1$ (1m/sec) in its own RS frame. [It’s all relative](#), as uncle Albert used to say.

To get you started, read about the 4D ‘glove’ [above](#) and about gravity [here](#).

Needless to say, the [orthodox theory of gravity](#) offers [different predictions](#). Have you seen [pink unicorns](#) dancing with [red fat herrings](#)? Ask Kip Thorne.

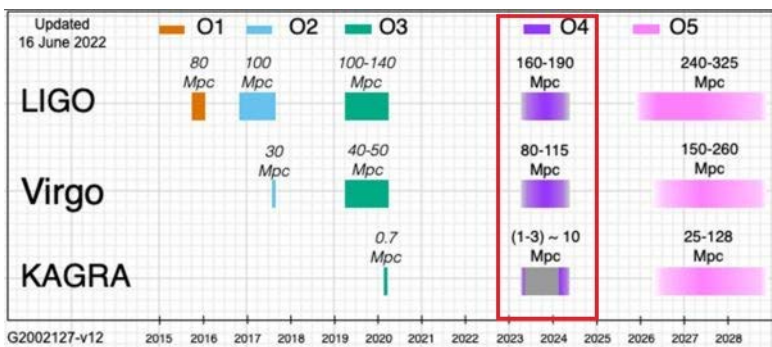
R4. Do you have any evidence supporting your ideas?

C4. Recall the [Earth tides](#) producing [tides](#) and pulling up↑ the oceanic crust composed of [rocks](#) up to 10 kilometers thick ([Wikipedia](#)). That’s very heavy.



No, the [Christoffel symbols](#) cannot rotate the Earth *and* pull up↑ rocks. Also, my theory of gravity offers *the only possible explanation* of the fake "GW 170817". Read closely the essay about gravity [here](#). *Delenda est LIGO*.

Can the LIGO experts convert "gravitons" into [gamma-ray bursts](#)? The first failure to suggest some coupling of gravity to EM field was in 1914. [No way](#).



LIGO News, [June 17, 2022](#): O4 will begin in March 2023. It is expected to last [one full year](#). The three "runs" so far, O1 - O3, showed no "gravitational-wave signals" ([arXiv: 2103.08520v4](#), [15 March 2021](#)). None. [Zilch](#).

Please do not hesitate to send your comments. Feel free to download the entire website (chakalov.zip, app. 70 Mb) from [this http URL](#).

13 August 2022, 10:55 GMT

NOTE

Is it indeed possible that [neutron-star mergers](#) produce short gamma-ray bursts. But can LIGO experts convert “[gravitons](#)” into [gamma-ray bursts](#)?



Neutron star merger ([Wikipedia](#)):
 “In April 2019 the LIGO and Virgo gravitational wave observatories announced the detection of candidate event that is, with a probability 99.94%, the merger of two neutron stars.” But despite extensive follow-up observations, no *electromagnetic counterpart* (Sic!) was identified.

NB: Nobody asked the “experts” from the “advanced” LIGO and Virgo how their “[gravitons](#)” were converted into [gamma-ray bursts](#). For if they fail to explain their “[GW 170817](#)”, their ‘run 04’ will be again [parapsychology](#). The [gamma-ray bursts](#) and their gravitational energy make *inseparable* bundle. LIGO “experts” wish to insert here some “[gravitons](#)”, right? Okay, prove it. I hope they will *not* speculate that [neutron-star mergers](#) produce explosions like the [Russian bombs in Ukraine](#), so these explosions do *not* involve any gravitational energy, and *only* have remote “electromagnetic counterpart”.

Currently, we are fed with bombastic statements like those from [Eric Betz](#):
 “For hundreds of millions of years, two city-sized stars in a galaxy not-so-far away circled each other in a fatal dance. (...) They were neutron stars — the collapsed cores left behind after giant stars explode into supernovas. Closer and closer they spun, shedding gravitational energy, until the stars traveled at nearly the speed of light, completing an orbit 100 times every second. By then, dinosaurs reigned on Earth, and the first flowers were just blooming. That’s when, 130 million years ago, the dance ended. The collision was fast and violent, likely spawning a black hole (Sic! - D.C.). A shudder — a gravitational wave — was sent out across the fabric of space-time. (...) Seconds later, a blast of high-energy gamma-rays - the most energetic kind of light - punched through the erupting cloud. The space-time ripple and the light crossed the cosmos together, and finally arrived at 6:41 a.m. Eastern on Aug. 17. (...) Two seconds later, NASA’s gamma-ray detecting Fermi spacecraft caught the blast. In the weeks since, hundreds of astronomers on all seven continents have turned their telescopes and spacecraft to watch the cosmic collision play out in all manner of light - radio, infrared, optical, ultraviolet, X-rays, gamma-rays. The Spitzer and Hubble space telescopes are still watching the event, as is the Very Large Array in New Mexico. Right now, it’s the greatest show in astronomy.”

Yes, it's a show. [Get real](#).

Back to R4 on [p. 6](#): Perhaps I have evidence of 'the fifth force' ([p. 2](#)).

The effect is very weak ([p. 4](#)) and I never had the chance to reproduce it in a [technical lab](#) under the supervision by the physicists and engineers there. Moreover, there is no viable theory of the *non-linear* gravitational radiation (nothing to do with LIGO) to explain the conversion of [gravitational energy](#) (forget "gravitons") into [gamma-ray bursts in the first place](#). On 24 August 1920, Sir [Arthur Eddington](#) called the gravitational radiation *ether waves*: "for though ether waves are not usually classed as material, they have the chief mechanical properties of matter—viz., mass and momentum". Pity he did not elaborate. The only mathematical theory we have is from Hermann Bondi in [1962](#). However, it is still unclear how the non-linear gravitational radiation transports its *source* from the right-hand side at [Einstein's field equations](#), while and at *the same* instant (**Sic!**) **acts on itself**. Perhaps the non-linear gravitational radiation can trigger *stresses* ([Robert Wald](#)). I can suggest their possible detection as 'fifth force' ([p. 2](#)) and demonstrate the gravitational rotation ([p. 4](#)). That will be [tough](#). But [next year](#) will be fun.☺

Again, the *source* of gravity ("timber"), which is placed in the right-hand side at [Einstein's field equations](#), is *not* gravity ("marble"): [MTW p. 467](#).

$$\underbrace{R_{\mu\nu} - \frac{1}{2}g_{\mu\nu}R}_{\text{Marble}} = \underbrace{\kappa T_{\mu\nu}}_{\text{Timber}}$$

The 'timber' has [stress-energy-momentum tensor](#), which obeys a [continuity equation](#), in line with the "conservation" of energy and momentum:

$$\boxed{4 \text{ apples: } T^{ab}{}_{;b} = 0 \quad 5 \text{ apples: } T^{ab}{}_{;b} = 0 \quad 2 \text{ apples: } T^{ab}{}_{;b} = 0}$$

The 'marble' is a different animal. Yes, it always affects the 'timber', but *not* because the 'marble' (gravity) is some physical field. By how? With the *gravitalized* fifth force ([p. 2](#)) of the **self-acting** 'timber' ([p. 5](#)); e.g., with *gravitalized self-acting Earth tides* or *gravitalized self-acting galaxies*. Watch *The Dipole Repeller* at [vimeo.com/202228346](#). Forget LIGO. Forget the idiotic "dark energy" ([p. 2](#)). [Get real](#).

D. Chakalov

4 August 2022

Last update: 18 August 2022, 14:52 GMT

<http://chakalov.net/#reports>