

**VL1.** D. Chakalov, *The Force of Time: Causal Arrow of Time* Vimeo and YouTube, 21 September 2023; read *Platonic World* ([book.pdf](#))

1. Time is 'change' (operational definition), but we can't change the **past**. We can only change the **future**; for example, with **spacetime engineering** (details in [VL2](#)).

1.1. I will talk here about Time, although I don't know what *is* Time. I can only try to explain what I mean when talking about Time, which reflects the difference between epistemology and ontology. The two can't 100% overlap, which is the main question in philosophy: what *we* know about the world (epistemology) vs. what the world *is* (ontology). Thus, I will speak here as philosopher, not as **spacetime engineer**.

2. Time and space are modeled with geometry, yet the two can never exist in some abstract "pure" form. For example, a platonic object, such as an *ideal* sphere: we can only imagine an ideal sphere made by "pure" geometry, but we can never see it nor touch it. We can only *imagine* it by looking at a physical object, e.g., a football.

For example, the two trajectories of a football (Fig. A and Fig. B): the trajectories, traced by the point at the center of weight of the football, are massless *geometry*.

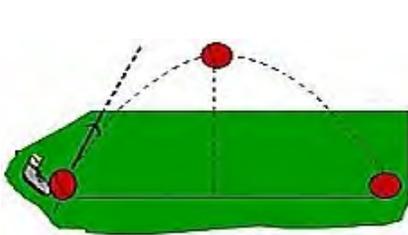


Fig. 1

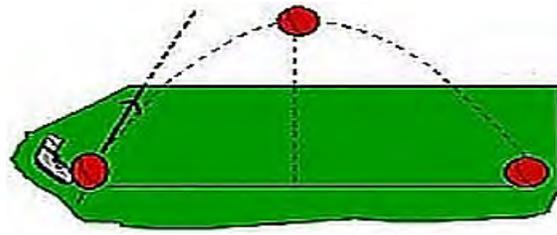


Fig. 2

3. Let's **start from scratch** (p. 20 in [Newton.pdf](#)): The grin on the face of the Cheshire cat, but *without* the cat (*Alice's Adventures in Wonderland*, [Ch. VI](#)).

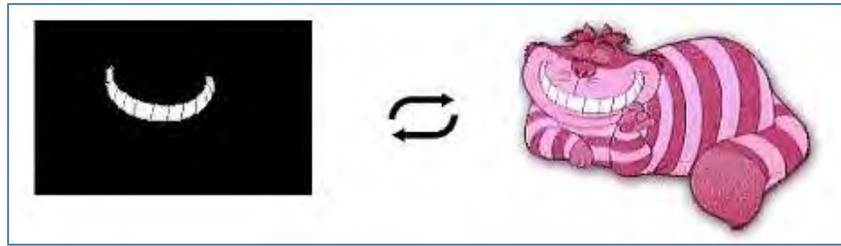


Fig. 3. Symbolic presentation of [Einstein's equations](#)

Example: the shape of a mountain. It is "pure" geometry, yet if we model gravity as massless *geometry* – not as the Cheshire cat in the RHS of the symbolic equation in Fig. 3 – then how can the shape *itself* [act back](#) on its source (the mountain)? Only matter interacts with matter. And here comes the Fifth Force as [the Force of Time](#).

To give you a glimpse at the [Fifth Force](#), I will use a kitchen glove (Fig. 12): you can't see my hand inside the kitchen glove, but you will notice that the glove has acquired the faculty of '[self-action](#)'.



Fig. 12 from p. 9 in [book.pdf](#)

**NB:** This is how the 'glove' can interact with **itself**. Not with some physical field outside the glove (not to mention paranormal ghosts).

4. What if the football ([Fig. 2](#)) or the 'glove' above can acquire an *additional* portion of energy and momentum? Illustration with Case B from [ball.mp4](#). In Case A, the magnitude of [the force of Time](#) is *infinitesimally* small yet not zero, perhaps smaller in magnitude than the vacuum energy,  $6 \times 10^{-10}$  joules per cubic meter ([J. Baez](#)).

Case A: Newton's [laws of motion](#)

Case B: No idiotic "dark energy"

But in some "anomalous" cases, the Fifth Force as [the force of Time](#) is not vanishing small anymore, and the effect ([fully reproducible](#)), triggered by the [self-acting](#) (Sic!) [Fifth Force](#) (Case B), can be detected. But can we increase it to create [free energy](#)?

That's the crux of the [self-acting](#) Fifth Force as [the force of Time](#), and also the force of Life ([Erwin Schrödinger](#)) and the force of [gravity](#) ([Zhaoyan Wu](#)): read [book.pdf](#). The [self-acting](#) force of Time has been found to have [very small magnitude](#), whereas the [self-acting](#) force of gravity can be immense, e.g., in [ocean tides and Earth tides](#). Can we scale up the former and develop brand new [energy technologies](#)?

5. I will elaborate on the Force of Time ([Case B](#)) – the [self-acting](#) (matter-matter) 4D glove ([Fig. 12](#)). Matter interacts with its *own potential* states in the [future](#).

5.1. You cannot derive the *asymmetry* of Time and causality from matter [alone](#), simply because the *asymmetry* is not there. But it does not come from some paranormal "ghost" either. The solution: the Platonic '[hand](#)' inside the 4D '[glove](#)'.

5.2. What is spacetime? Cosmology and 'time zero'. [Yakov Zeldovich](#): "Long time ago, there was a brief period of time during which there was still no time at all." Joking aside, the puzzle of spacetime topology is unsolved ([Slide 12](#) and [VL3](#)).

5.3. What is the "direction" of the arrow of causality? It points to the [future](#), but the arrow is not relational. Also, we can't *derive* causality from matter (4D [glove](#)) [alone](#).

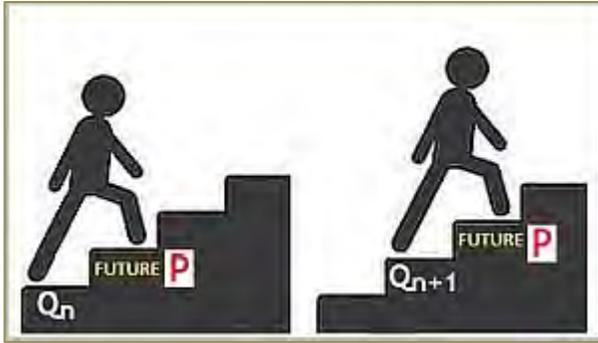
5.4. What is the *structure* of Time due to the Force of Time? *Perfect* continuum of the 4D “surface” of the ‘expanding balloon’ (p. 6 in [book.pdf](#)).

**NB:** The matter-matter (M-M) interactions in the *causal* arrow of Time: “A cause precedes its effect” ([Wiki](#)). We certainly can perceive the *causal* arrow of Time ([Eddington](#)), but is it driven *exclusively* by matter and fields? If ‘yes’, the causal arrow of Time will be the result of some *physical* (Sic!) **causal field** that must be *added* to every other physical field ([dark\\_cord.jpg](#)) – even at [rest](#). If ‘no’, the causal arrow of Time will have to be some ‘**old dark god**’ outside the physical world, which (or “**Who**”) can act on matter *without* being matter. Bad ideas. The third solution: the **causal field** (Platonic **matrix**, VL3) determines and *guides* the **self-acting** faculties of matter, *animated* by the Force of Time ([Case B](#)) – the **self-acting** (matter-matter) 4D “**glove**”.

Back to the football ([Fig. A](#) and [Fig. B](#)): The causal arrow of Time does not fix uniquely the **next** ‘position’ of the football, but will only place it in a new temporal state in the **future**, which was *caused* by its preceding state in its **past** (light cone). This temporal **asymmetry** CANNOT be implemented by matter *alone*. If you disagree, read my proposal to eight physicists [here](#).

Now let’s proceed to the *atemporal* invariant **matrix** (pp. 5-8 in [The Fifth Force](#) and pp. 5-9 in [SE.pdf](#)) for the **next** step along the **arrow of Time**: *Panta rhei* ([Heraclitus](#)).

The causal arrow of Time cannot be observed ‘**online**’ and timed with a 4D clock, because any observation with **light** can reveal *only* the irreversible **past**, and only one-past-state-at-a-time. For example, we can see the evolving state of the Sun only *after* **500 sec** needed for the photons from the Sun to reach Earth. Thus, we can see only a *chain* of Sun’s states, placed in our irreversible **past post factum**, like the [Macavity cat](#). With light, we cannot see any “**gap**” in the *perfect* continuum of facts, shifted into the irreversible past in the arrow of Time – one-past-state-at-a-time. The potential **future** exists as **Platonic** reality of *propensities*, which are “just in the middle between possibility and reality” ([Werner Heisenberg](#)). **NB:** Notice that the consecutive past-states in Fig. 4 below,  $Q_n, Q_{n+1}, Q_{n+2}, \dots$ , *ad infinitum*, are bundled (Sic!) with their consecutive states in the **future** ([Slide 1](#)): *Panta rhei* ([Heraclitus](#)).



If everything changes – *Panta rhei* – what is the invariant **matrix** that does *not* change? The **4D universe** is ‘flying’ along the **arrow of causality**, but what keeps “the miraculous identity of particles of the same type” (MTW p. 1215)? Enter the *atemporal Platonic World* of the **Arrow of Time** (Eq. 1).

Fig. 4. Read p. 20 in *Platonic World* ([book.pdf](#)).

With light, we cannot *physically* see the “gaps” at which the guy above is at rest in the luminiferous Aether – no physical stuff and no *relational* state of motion can be attributed to it (Albert Einstein). Replace the guy above with the 4D ‘glove’ (Fig. 12) and you will understand the **self-acting force of Time** driven by the **Fifth Force**. The latter determines the *quantum causality* in the quantum world as well, only the quantum “Sun” does *not* have a definite state *before* becoming the fact-state in the irreversible past. Ditto to the gravitational “Sun”. More in ‘the general rule’ (p. 12).

This is how the **self-acting ‘glove’** (the *physical* cat in Fig. 3) becomes *animated* by the **Fifth Force** and acquires **additional energy-momentum** and **angular momentum**, thanks to which the *physical* cat becomes just **gravitalized**. There is no proprietary “gravitational energy”, similar to e.g. the electromagnetic energy. Why not? Because gravity is **universal**. But it works only with the physical stuff endowed with positive mass, which was “already” (**Macavity**) shifted into the irreversible past in Fig. 4. If we wish to fly like the ‘gimbal’ (YouTube) and develop **new energy sources**, perhaps we only have to *tweak* the **Platonic** form of gravity in the potential **future** (Fig. 4) with **spacetime engineering**; details at p. 12 in [book.pdf](#) and in VL2. Simple, isn’t it?

Finally, I will say a few words about the elephant in the room mentioned previously: the perpetual **non**-conservation of mass and energy, thanks to which matter can *both* gain *and* lose energy-momentum and angular momentum. Instead of ‘**conservation over time**’, applicable to some **fictitious gravitationally-isolated systems**, we have a new *dynamical balance* of **gravitalized** physical systems, called for short ‘apples’:

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

The re-nullified term in the RHS is the *wegtransformierbar* **Platonic** gravity.

I do not know how the *gravitalized* ‘apples’ **emerge** from the ‘intangible energy’ suggested by **Hermann Bondi**, and I could never understand his ‘**news field**’ either. Bottom line is that we may not short-circuit **Platonic** ‘oranges’ to physical ‘apples’.

By the same token, we do not know how the **intact** (intangible) **Platonic** quantum state is “converted” into its *physicalized* 4D ‘jackets’: read **Erwin Schrödinger** and my efforts to explain the puzzle on p. 7 in [talk.pdf](#). Perhaps we need **Mathematics**. The mantra ‘only matter interacts with matter’ brought me (8 November 2015) to the so-called *evolution equation* (p. 28 in [Intro.pdf](#)), but it is still in symbolic form.

The underlying idea about *quantum-gravitational* vacuum is not new; read e.g. the proposal by Friedwardt Winterberg in [arXiv:0805.3184](#), Sec. 5 and ref. [5] therein. The *evolution equation* (VL3) presupposes a “polarization” of the Planck Aether, due to the Arrow of Time ([Fig. 4](#)), in terms of two *balanced Platonic squared* elements:

$$|w|^2 = |m|^2 + |m_i|^2 \quad (\text{Eq. 1}).$$

Eq. 1 suggests dynamical *balance* of the real mass (**m**) and the imaginary mass (**m<sub>i</sub>**) in [diagram.jpg](#). The *physicalizable* 4D world (**local mode** of spacetime) is depicted in the **re-balanced** RHS at Eq. 1, but with light we observe only the *residual squared* term  $|m|^2$  as *balanced* ‘**apples**’ – never the “**smuggled**” **negative mass**. Of course, my heuristic equation has to be amended with the mechanism by which the *squared imaginary* time (**Arthur Eddington**) shows up in the **invariant spacetime interval** with *negative sign*. And much more: read pp. 6-7 in [book.pdf](#). Yet I do believe it offers a path toward eliminating the pathetic “**dark energy**” with the **self-acting**  $|m|^2$  in **Case B**, and to exploring the **vacuum**. *Besser eine Laus im Kraut als gar kein Fleisch*, correct?

Again, the underlying reason of my **efforts** (pp. 12-13 in [book.pdf](#)) is to avoid the upcoming **climate crisis**. The theory is **speculative**, much like the **dubious map** used by **Christopher Columbus** in August 1492. But if he didn’t go west,

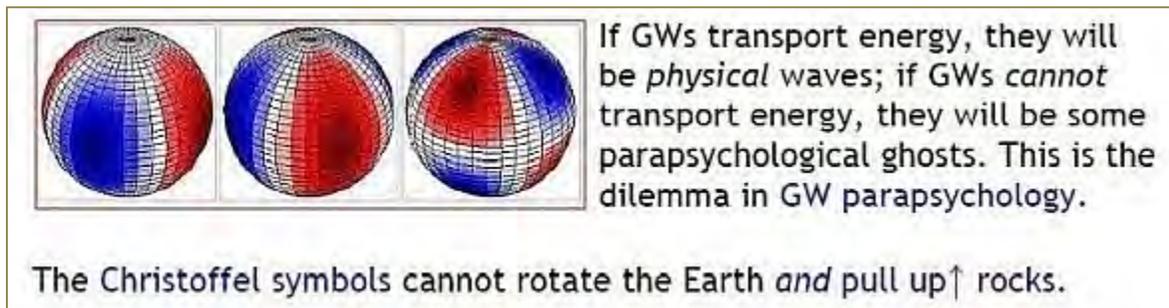
with the *insane* hope to find a shorter route to the Far East, how could he discover America?

## Questions & Answers

Q1. Why are you talking about “force” of Time?

A2. Let me start with the cases in which we do *not* have to talk about the Force of Time in the causal arrow of Time (Fig. 4): the football kicked by the footballer in Fig. 1 and the billiard ball hit by the stick in Case A. Here the *physicalized* Force of Time, as **self-acting Fifth Force** of the ‘glove’ in Fig. 12, is *effectively* zero, which means no *observable* “anomalous” effects, like those pictured in Fig. 2 and Case B, can be recorded. And instead of shooting a photon toward a mirror, in which case its emission-and-absorption “back” to you will be *one* single 4D event (p. 7 in [SE.pdf](#) and p. 20 in [book.pdf](#)), consider tossing a small rubber ball against a wall. Imagine that at  $t_1$  you toss a ball at the wall, in such way that the ball bounces back and hits you later at  $t_2$ : you will be watching the consecutive states of the ball during the entire interval  $t_2 - t_1 > 0$ , measured with your **clock** in the *local mode* of 4+0 D spacetime. Simple and clear, as the physical time is related to distance and speed in 3D space. So, if you replace the ball with sound waves travelling in the air with speed about **343 m/sec**, you will again measure a *finite* interval  $t_2 - t_1 > 0$ , although with a much smaller duration. But how about a light beam emitted by the Sun, which needs about **500 sec**, as measured with your **clock**, to reach your eye on earth? To quote [Wikipedia](#), “a photon arriving in our eye from a distant star will not have aged”, so we have a serious puzzle (pp. 3-4 in [Heraclitus.pdf](#)): a *timeless* photon in the *global mode* of 4+0 D spacetime, and the *physical* time of **500 sec** measured with a **clock**. Moreover, unlike the air *medium* in which the sound waves propagate, there is no *physical* medium in which **EM waves** could “propagate”: the *atemporal Aether* is not physical stuff that we can detect. (If we could, the theory of Relativity will be false.) But then how come EM waves “produce” those **500 sec**? With **quasi-local interactions** (p. 20 in [book.pdf](#)): light creates EM waves in the *local mode* of 4+0 D spacetime, while residing in the *atemporal Aether* along the **radius** of the expanding “balloon” shown on p. 6 in [book.pdf](#).

Ditto to the *wegtransformierbar* quantum waves: there is no stuff that “vibrates” in the quantum world. We observe only 4D ‘gloves’ (Fig. 12). The *wegtransformierbar* Platonic world is being re-nullified – once-at-a-time – in the *local mode*, thanks to which all biological, quantum, and *gravitalized* 4D ‘gloves’ (Fig. 12) are endowed with their self-acting Fifth Force, as explained above. In the causal arrow of Time (Fig. 4), the self-acting Force of Time is *infinitesimally* small, whereas the self-acting force of gravity can be immense, e.g., in ocean tides and Earth tides.



Can we scale up the former and develop brand new energy technologies? The temperatures could rise by *more than 1.5C by 2027!* Time is running out!

## VL2. D. Chakalov, Spacetime Engineering: Psychology 101

Vimeo and YouTube, 31 October 2023; read *Platonic World* (book.pdf)

Let me start with a brief overview of Platonic theory of spacetime (chakalov.net) by reproducing Fig. 15 in *Platonic World* (book.pdf): Nature is *both God and ONE*. The motto of Heraclitus ‘everything changes’ (Fig. 4 in VL1) applies to every *relational* viz. comprehensible object, including the Platonic matrix (VL3) as *Res potentia*. The latter is the ever-growing “memory” of Nature, manifested along the causal arrow of Time (Fig. 4): Time is Nature’s way of keeping everything from happening all at once (John A. Wheeler). Once created by Nature as God-and-ONE, the Platonic matrix cannot be destroyed. It is what Albert Einstein called ‘God’s thoughts’.

But Nature itself, as God-and-ONE (Fig. 15), *does not change*.

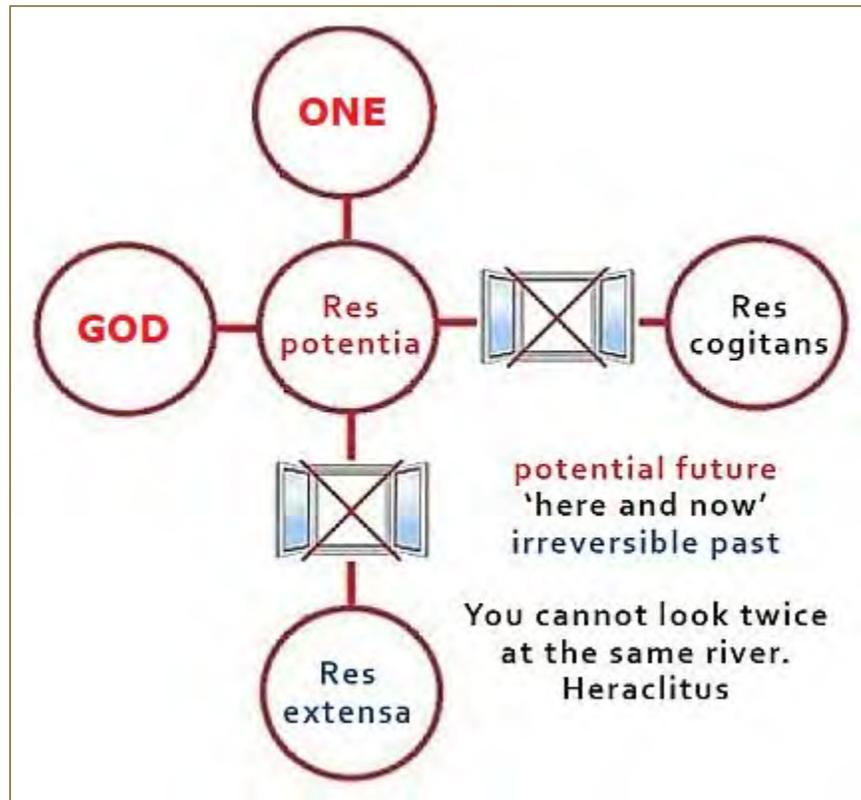


Fig. 15, p. 13 in *Platonic World* ([book.pdf](#))

Also, we *cannot* (Sic!) talk about some “Universal Mind” or “conscious and intelligent spirit” (Max Planck, p. 10 in [book.pdf](#)) of Nature. We can only speculate about some ultimate quantum-gravitational **matrix** (VL3), which may govern the physical world ([Slide 9 and Slide 10](#), and [Slide 12](#)) – *not* about an anthropomorphic global ‘[movie operator](#)’ supervising “His” 4D movie.

Now let’s [drop metaphysics](#) and move to **facts**. On 31 October 1989, I completed my first report on the physics of the human brain ([mind-matter.pdf](#)). From 15 January 1990 until the end of July 1990, the abstract of my report was sent by surface mail to many physicists and brain research centers in the United States. Regrettably, I couldn’t find people interested in my research.

This video lecture will focus on the [heterarchical structure](#) of the human brain and psyche, developed at Uznadze Institute of Psychology in Tbilisi (Georgia), founded by [Dmitri Uznadze](#) (the history of my project can be read in [history.pdf](#)).

Essentially, I will offer a concise presentation of [Psychology 101](#). The subject is indeed huge ([VL3](#)). I will assume you have studied the 'manual' ([SEM.pdf](#)) and the doctrine of *trialism* (pp. 1-2 in [Force.pdf](#)). Here's the experiment (read below) from p. 7 in [book.pdf](#).

Let me explain how your local 'movie operator' works in your adult [brain](#). 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](#)? No matter how you solve the task, you will use [mental images](#), and the object performing the counting is your *local* 'movie operator' – the human brain & mind equipped with [self-awareness](#). Sure enough, the counting requires work in the brain, performed *by* the brain (not by the mind) on [itself](#), which is a perfect example of the **self-acting Fifth Force** – only matter [interacts](#) with matter, by following the rule 'think globally act locally'. Here the "thinking" has unique *physical* origin: the [matrix](#) (p. 7 in [The Fifth Force](#)). But can you [tweak](#) your body and by proxy the whole physical world? [RDFM](#).

I will also use the horizontal section of [Fig. 15](#) at p. 13 in *Platonic World* ([book.pdf](#)), and will add here two **red** arrows symbolizing the essence of [Psychology 101](#) (Fig. 1).

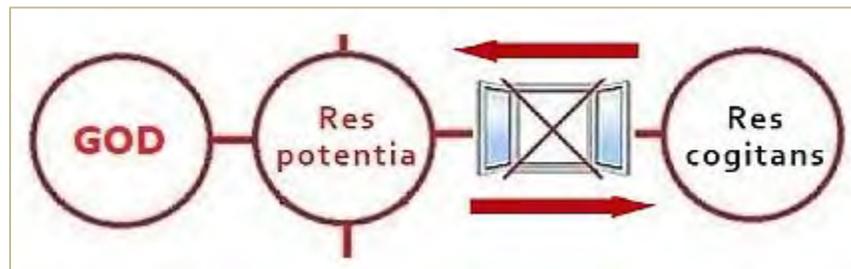


Fig. 1. Read the doctrine of *trialism* at pp. 1-2 in [Force.pdf](#).

In the third video lecture ([VL3](#)), I will use the vertical section of [Fig. 15](#) at p. 13 in [book.pdf](#), and will also add **red** arrows (Fig. 2) next to the *absent* "window" toward the [human brain](#) (Res extensa) and its *atemporal* [matrix](#) ([VL3](#)) called **Res potentia**.



In Fig. 2 and in Fig. 1 [above](#), the *absent* “windows” indicate the *windowless monad* (Leibniz) called **Res potentia**: a *dual Platonic* entity providing the common source of both matter (Res extensa) and psyche (Res cogitans, Fig. 1). In the doctrine of *trialism*, the *dual Res potentia* is like elephant’s “trunk” to all **Eskimos**: we cannot comprehend the common source of both matter (Res extensa) and psyche (Res cogitans). On the other hand, there exist *interactions*, depicted with two sets of **red** arrows, between the *dual Res potentia* and its two *complementary* emanations, called psyche (Res cogitans) and matter (Res extensa). Notice that matter (Res extensa) stands for all ‘gloves’ (Fig. 12) and quantum ‘jackets’, whereas their *atemporal Platonic matrix* is **Res potentia**.

Fig. 2. Read [Fig. 12](#), pp. 11-12 in [book.pdf](#), and [donkey.png](#).

Do we know whether the doctrine of *trialism* (pp. 1-2 in [Force.pdf](#)) matches the case chosen by Nature? We don’t. To paraphrase Sir Arthur Conan Doyle, when you have eliminated the impossible, whatever remains, however improbable, *should* be the truth. What we do know is that the **human brain** (Res extensa, Fig. 2) simply *cannot* be directly linked to its psyche (Res cogitans, Fig. 1), because the psyche will have to be either some brand new *physical* field, or a paranormal ghost. Sounds **familiar**?

Let’s move to the **heterarchical structure** of the human psyche (Res cogitans, Fig. 1), mentioned on **31 October 1989**, and then proceed to **Psychology 101** and [donkey.png](#).

The human psyche has three “layers” (pardon my French). The first layer is the state of **self-consciousness**: we are aware of our **intentional activity**, and at the same time we are *aware* that we are aware. The second layer is the **pre-attentive** activity of our **subconscious mind**, and the third one is the *kollektives Unbewusstes* (Carl Jung).

The first layer of [self-consciousness](#) is demonstrated with the previous experiment with the [cube](#). All your cognitive activity, even if it seems ordinary and simple (for example, counting from 1 to 10), requires “splitting” the first layer into a mental “screen”, which you “observe” and work with your mental images projected on it, like a movie operator watching her/his movie; read again p. 7 in [book.pdf](#). Sure enough, the perpetual mental images change at every instant ‘now’, but the ‘movie operator’ does **not**, in the sense that it remains *invariant* in all human brains. My dog [Linda](#) has much simpler ‘movie operator’ and she lacks [self-awareness](#), poor thing 😊.

The second layer of [pre-attentive](#) activity is ultimately related to the emotional reactions triggered by the *difference* between what we anticipate to perceive and our actual perception. This may serve as a simple operational definition, but it is by no means “simple”. As an example, you walk down the stairs in your house, it is dark and you can’t see them, but you remember all steps. At some point, you expect to reach the flat surface of the floor at the end of the staircase, but in fact there is one more step. When you hit this unexpected last step, you will be ‘surprised’ and will also realize that all your body has been prepared to reach the flat floor. In short, the second layer of your [subconscious mind](#) runs quietly and “parallel” to the first one.

The third layer of what [Carl Jung](#) called ‘*kollektives Unbewusstes*’ also runs quietly and “parallel” to the second one, but its manifestations do *not* trigger any emotional reaction, because we cannot be aware of our unconscious *Ganzkoba* ([D.N. Uznadze](#)). For example, the [posthypnotic suggestions](#) implanted at this third layer could lead to particular action, which the patient may not know *why* she or he is doing it, because the posthypnotic suggestion is perceived at the *first* layer as if it was planned solely with the free-will choice of the patient. Also, you may recall a *spontaneous* decision that you have taken allegedly all by yourself, but later you realize that you *might* have been influenced by our *kollektives Unbewusstes*. This is a very murky activity of the human psyche (recall [synchronicity](#)), which cannot be reproduced on demand.

But what if we can augment our first layer with [spacetime engineering](#)? Can we learn to develop real-time feedback from the [second layer](#)? For example, read about the demo by [Flavian Glont](#) on p. 21 in [book.pdf](#). As to the influence from the third layer, recall that in fire walking (p. 1 in [history.pdf](#))

people usually imagine walking on 'damp moss'. I have witnessed fire walking, it indeed shocking, which is perhaps the reason ([cognitive dissonance](#)) why many academic scholars [deny it](#). If they watch anomalous facts recorded on camera, they will label them "[magic](#)" and again flatly deny them.

Let's be smarter. I will show in [VL3](#) a [low-energy gravitational rotation](#), which looks "anomalous" only to the current and essentially incomplete [gravitational hypotheses](#).

But first, let me explain an important issue in the experiment with the [cube](#).

Suppose you look at the sky and see it 'blue'. You know that its *bluishness* ([qualia](#)) corresponds to EM waves with wavelength around [475 nm](#), and also that your [brain](#) has somehow "converted" these [EM waves](#) to what we would call 'neural correlates of consciousness' ([NCC](#)). We don't know how this puzzling phenomenon "happens", but it does work very well in all human brains, so I will think of it as a '[black box](#)'. As [Thomas H. Huxley](#) remarked in [1869](#): "How it is that anything so remarkable as a state of consciousness comes about as a result of irritating [nervous tissue](#), is just as unaccountable as the appearance of the Djinn, when Aladdin rubbed his lamp." Point is, we can at least study the *brain* part of our 'black box', hoping to understand how its *physics* differs from, say, a computing machine: read [Hubert Dreyfus](#) from 1972. This was the target of my project announced on [31 October 1989](#), which I started back in [January 1972](#). And if you dig deeper, you will find out that the fundamental parameters of the physical world must be such as to admit the creation of life and [conscious observers](#) within it "[at some stage](#)". How can this happen? Thanks to the matter-psyche '[trunk](#)' dubbed [Res potentia above](#). We don't accept [parapsychology](#), neither with nor without math.

So, the experiment with the [cube](#) demonstrates that we can alter our [NCC](#), at least at the [first layer](#). Read also about the *physiology of activity* at p. 12 in [book.pdf](#). With [spacetime engineering](#), we can "expand" our brains to "absorb" a light object, such as a small [rubber ball](#), and then rotate it like the mental cube [above](#). Now you may say — naah, that's impossible! But what means 'impossible'? You can't put on your jeans through your head for sure.

Your brain and the [rubber ball](#) are grounded on the quantum world, and can be entangled by [quasi-local interactions](#) (Q2/A2 on p. 20 in [book.pdf](#)). Back in

July 1986, I suggested two types of 'distance' in Nature: the physical distance definable with [spacetime metric](#), and the **Platonic** "distance" in our common **Res potentia above**. Physically speaking, the latter "distance" is *exactly zero* ([light-like intervals](#)), but what is the "distance" between the *idea* of a tree and the *idea* of a mountain in your [memory](#)?

Again, the *atemporal matrix* (VL3) called **Res potentia** (Fig. 15) is located "inside" the photon, along the (hyperimaginary) axis **W** of the '[expanding balloon](#)' (p. 6 in [book.pdf](#)). This is the essence of [two modes of spacetime](#) and the physics of spacetime engineering.

Long story short, learning [spacetime engineering](#) is a bit more difficult than learning to juggle three balls: read p. 4 in [SEM.pdf](#). All I can say is that the feedback from the mental "[carrot](#)" springs *directly* from my memory, as if I have [suddenly](#) "recalled" it (p. 5 in [SEM.pdf](#)). Works flawlessly at the [first layer](#), better than a [Swiss watch](#).

This is [Psychology 101](#) in a nutshell. If you have questions from VL1, please fire them up at [dchakalov@gmail.com](mailto:dchakalov@gmail.com) by 31 December 2023. Did you manage to understand the '[elephant in the room](#)' and the *evolution equation* (VL1)? If not, I will gladly try again. If yes, I will demonstrate, with utmost pleasure, a [low-energy gravitational rotation](#), as I promised [previously](#).

**VL3.** D. Chakalov, *The Platonic Matrix*. Vimeo and YouTube, 31 December 2023. Read p. 18 in *Platonic World* ([book.pdf](#))

Today marks the end of 2023 and the release of my last video lecture about my [book](#). Let me assume that you have watched and understood the basic basics explained in the two previous lectures, VL1 and VL2. If you couldn't make it, feel free to contact me at [dchakalov@gmail.com](mailto:dchakalov@gmail.com). I will reply to all your questions within 72 hours or less.

**NB:** It is *very* important to clear possible [confusion](#) and [misunderstandings](#). Otherwise the bold facts discussed here may look like some Chinese "[magic](#)". Perhaps you too can switch off the [inertia](#) of your body and fly it like the [gimbal](#) at [YouTube](#):



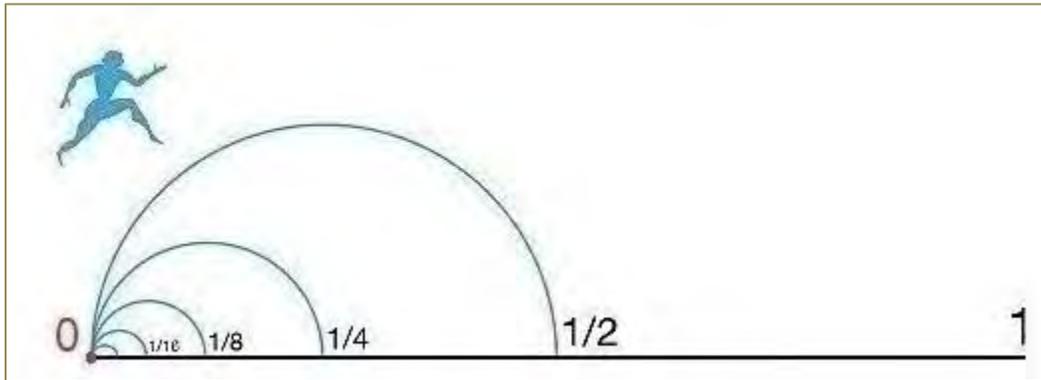
Just modify the **self-acting**  $|m|^2$  in the *evolution equation* (VL1) “before” (Sic!) it will **re**-appear with *physicalizable*, that is, with **positive mass**. How? With the **Fifth Force**. It is right **above your neck**, and you successfully used it to rotate the **mental cube**.

There is no “magic” in the **brain & mind**, only the bold **fact** that we can “accelerate” our thoughts **instantaneously**. Check out also VL2, Slide 9 and Slide 10, and Slide 12.

Welcome to the Platonic **matrix** (pp. 5-8 in *The Fifth Force* and pp. 5-9 in *Notes on Spacetime Engineering*). **It** (not “He”) lives in the **Platonic** world called **Res potentia** (Fig. 15) and located “inside” the photon, along the axis **W** of the ‘expanding balloon’ (p. 6 in *book.pdf*). The **matrix** encapsulates the entire **potential future** (Fig. 4) of the 4D physical world (**local mode**), as a virtual *atemporal* ‘handshaking’ web (Aether, VL1) of **quasi-local interactions** creating the inertia (Dennis Sciama) of *physicalizable positive mass* (Q1/A1 in VL1), without any “inertial waves”. The **matrix** creates the **complex** quantum waves (VL1) as well. What if we can create **gravitational rotation**, on **demand**?

To unravel the Platonic **matrix**, we need to zoom on the *atom of geometry* (Fig. 7 in *book.pdf*) and the **hyperimaginary numbers** along **W** (*ibid.*, pp. 6-7).

Recall the paradox of motion from Zeno ([Wikipedia](#)):



If the *infinitesimal* step forward is exactly zero, the runner will never move. But if the *infinitesimal* step forward is greater than zero, the sequence will not have any *limit*. The puzzle is best illustrated with [Thomson lamp paradox](#). I propose to amend the [synthetic differential geometry](#) with [hyperimaginary numbers](#), and develop *hypercomplex* analysis (pp. 4-6 in [FI.pdf](#)) to calculate the *physicalizable* 4D 'gloves' ([Fig. 12](#)) of the Platonic **matrix**, shifted to the irreversible **past** ( $Q$ ) of the arrow of Time ([Fig. 4](#)). In short, every geometric point from the [real number line](#) has new *hyperimaginary* degrees of freedom, which are *exactly re*-nullified in the physical world (*local mode* of spacetime) of 4D 'gloves' ([Fig. 12](#)). We need [Mathematics](#) to unravel the *pre-geometric* Platonic **matrix** and (hopefully) expand the experiment with the [mental cube](#) to [industrial spacetime engineering](#).

As of today, the reaction to my proposal has been quite [muted](#). Regrettably, our society has acceptable [stereotypes](#) only for some "magic". Suppose, for the sake of argument, that I demonstrate low-energy modified gravity (p. 9 in [SEM.pdf](#)) to the public by flying over the River Thames in London. The tourists there will be fascinated — they *love* free entertainment and "magic". But the [theoretical physicists](#) won't be interested — they utterly refuse to question their [gravitational hypotheses](#) in the first place. And what can happen if I tell journalists that I suggest to exploit the [gravitational rotation](#) and develop new energy technology to combat the [climate crisis](#)? I will step on the toes of many *highly* influential people in the [oil business](#). Well, let's see what will happen.

As a precursor to my demo in London next year, let me show you Case B from [VL1](#); read also [VL2](#) and p. 10 in [text.pdf](#). Of course, I do not — and could not — use any "special gadgets" and/or "animation software". Only the [Fifth Force](#). *Voila*. So, what do you prefer for Case B? [Zero-point "dark energy"](#) or [BCCP](#)?

Look at [coal-based power plants](#) and power plants based on [nuclear fission](#):

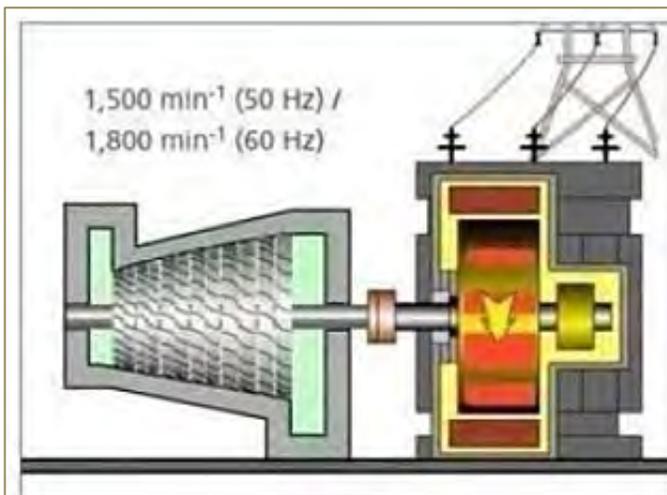


For example, [Bełchatów Power Station](#), Poland.



For example, [Unit 3](#), Flamanville Nuclear Power Plant, France (15.07.2010).  
Expected in early 2024 with cost around [€13.2 billion](#) (perhaps *much* more).

How about my proposal based on [spacetime engineering](#)? It can be developed parallel (not alternative) to the power plants, as Plan B. Time is [running out!](#)



My urgent 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. No need for water supply, heat, coal, nor hazardous nuclear fuel. We won't need ITER either. Is this possible? [Why not?](#)