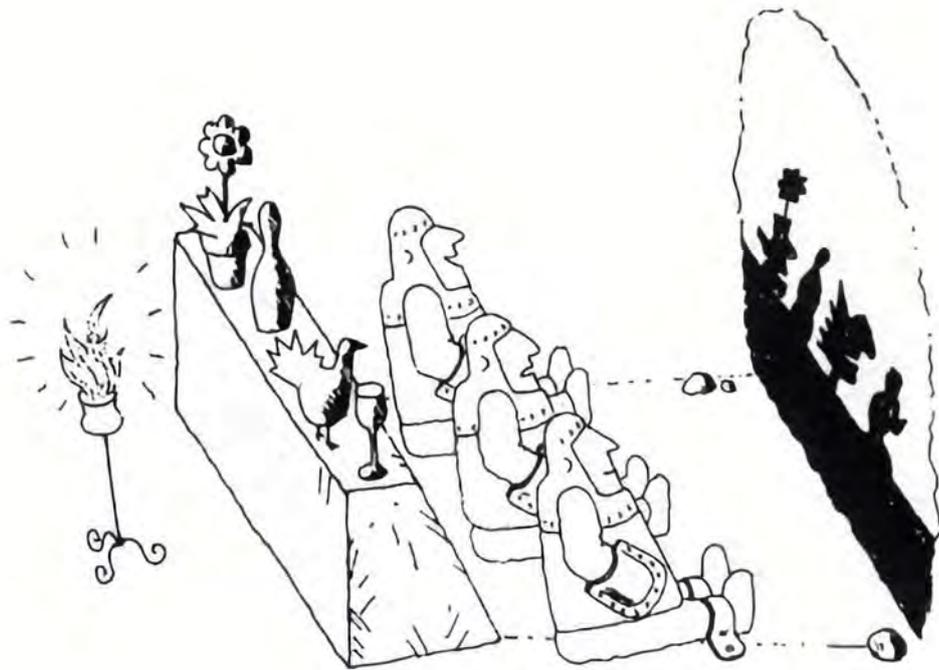


PLATONIC WORLD



THE FORCE OF LIFE, TIME AND GRAVITY

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Platonic World: The Force of Life, Time and Gravity

I am writing a book with the title above, aimed at the general audience. To get a glimpse at it, read the first paragraph of my website (link [below](#)) and follow the links. The book will be supplemented by a set of [video lectures](#), which will (hopefully) explain the Platonic World to my digital-generation readers, who simply don't touch paper, like my children and grandchildren.

In the first part of the book, I will present its [skeleton](#), ensuing from a set of [first principles](#) borrowed from [Zeno](#) (the paradox of [motion](#)), [Aristotle](#), [Plato](#), [Heraclitus](#), and [Leibniz](#) (the common origin of [matter and psyche](#)). The second part will supply the first one with firmly established facts from [Mathematics](#), [life sciences](#), [physics](#), and [psychology](#), like a Husserl's *noema* – an indefinite whole, which is gradually filled with concrete content. And the third part will derive the predictions of the theory; for example, how to use the Platonic World to combat [climate change](#) – [spacetime engineering](#) based on the [Fifth Force](#). In my opinion, this is *the only way* to save our planet from [climate catastrophe](#). By 2030, we must be ready to implement the technology of producing [unlimited clean electricity](#). Read about the upcoming [climate crisis](#) at the end of my [website](#). Time is running out!

This is the scope of my forthcoming book. I will soon promote it, in order to find a suitable publisher, by demonstrating the [Fifth Force](#)* in my theory of [Time and gravity](#) – read [Über die Geschwindigkeit von Licht und Zeit](#) and [Spacetime Engineering Manual](#). I do not claim some “[discovery](#)”, but a low-energy manifestation of [gravitational rotation](#), which looks anomalous only in the framework of your current, and essentially incomplete, [gravitational theory](#). The effect has to be studied under controlled laboratory conditions, to find out whether we can – or cannot – unleash and control much more powerful [gravitational rotation](#) and rotate the [turbines of power plants](#) without any nuclear or fossil fuel, and produce [unlimited clean electricity](#). Again, this is *the only way* to avoid the devastating [climate catastrophe](#), for the sake of our children and grandchildren. Time is indeed running out.

Feel free to contact me by email at dchakalov@gmail.com.

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14 March 2023, 08:33 GMT

*Watch modified gravity from 03:50 to 04:09 at vimeo.com/734682937.

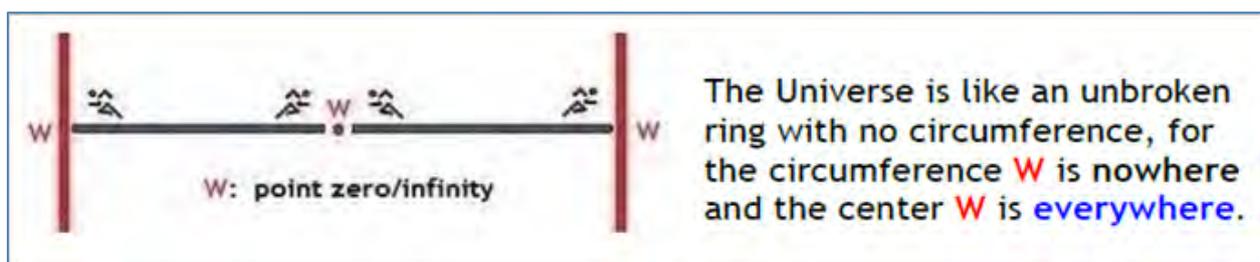
Synopsis

Every theory is like a map – not the actual territory. We need a navigation map to discover the treasure hidden in the [matter](#) \Leftrightarrow [psyche system](#).

There are some well documented cases, called [gimbal](#) and [teleportation](#), which will certainly look “anomalous” if we trust the current [gravitational hypotheses](#). In my opinion, these peculiar facts match [Clarke’s third law](#): any sufficiently advanced technology is indistinguishable from “magic”. This book has far more modest goals, namely, to explore the predictions of [modified gravity](#) developed by the author, with emphasis on a brand new technology for [unlimited clean electricity](#) to combat the [climate change](#).

Let’s focus of the *physics* of [matter](#) \Leftrightarrow [psyche system](#): the *mediator* of the human mind on its [brain](#). The *mediator* (pardon my French) is not like a physical shipping service (think DHL). The perplexing *physical* nature of the mediator is that it cannot be some physical field nor a paranormal “ghost” ([history.pdf](#) and [video.pdf](#)). The solution to the puzzle is provided with the [arrow of Time](#): the matter and the [psyche](#) are *both* connected by their potential [future](#) *and* separated by the arrow of Time, in order to preserve their entirely different nature. Namely, matter is placed in the irreversible past as ‘[facts](#)’, and the psyche in the [potential future](#) of matter ([Slide 14](#)).

This is the crux of the [force](#) of Time exhibited in the [arrow of causality](#). No [physical stuff](#) (forger the pathetic “[dark energy](#)”) can fit the bill. Only the Platonic World (pictured as “trunk” in the doctrine of [trialism](#)) can provide the [force](#) of Time, hereby the force of Life ([Erwin Schrödinger](#)) and [gravity](#). Also, the Platonic World is *perfectly* hidden in the spacetime continuum: It (not “[He](#)”) is infinitely close *and* infinitely away from the 4D instant ‘now’:



Read p. 6 in [Force.pdf](#), pp. 2-3 and p. 7 in [Fl.pdf](#), and [Wolfram](#) and [limit](#).

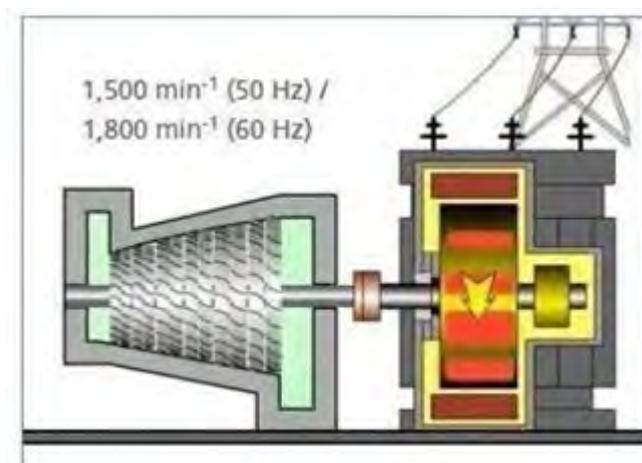
To give you a glimpse at the [force](#) of Time, read BB1 and BB2 in [Force.pdf](#) and [Macavity](#): the [lattice](#) ([Slide 1](#)) is *unobservable* with light ([Zen](#)). The [potential future](#) is storing the [matrix](#) for the *next* step along the [arrow of Time](#) suggested by [Heraclitus](#). Regarding quantum mechanics and gravity, read the ‘[general rule](#)’ and [Newton.pdf](#). Do not trust current [GR textbooks](#).

We need [Mathematics](#): p. 19 in [talk.pdf](#) and the drawings [here](#). Given the “miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics” ([Eugene Wigner](#)), I am firmly confident we will unravel the new [hyperimaginary numbers](#). The sooner the better.

In the first chapter, I will examine the [first principles](#) employed in this book, borrowed from [Zeno](#) (the paradox of [motion](#)), [Euclid](#) (the father of [geometry](#)), [Aristotle](#), [Plato](#), [Heraclitus](#), and [Leibniz](#). In the second chapter, I will supply the first one with firmly established facts from [Mathematics](#), [life sciences](#), [physics](#), and [psychology](#). In the third chapter, I will derive the predictions of the theory; for example, how to use the Platonic World to combat the [climate change](#) – [spacetime engineering](#) based on the [Fifth Force](#) manifested as the Platonic [force](#) of Time (p. 11 in [Force.pdf](#)). And in the last fourth chapter, I focus on the [mathematical challenges](#) of the new [hyperimaginary numbers](#) (pp. 9-15 in [talk.pdf](#)) and those of the [Fifth Force](#).

As mentioned [earlier](#), I will promote my book by demonstrating the [Fifth Force](#) in order to find a suitable publisher, by the end of this year at the latest. At this moment, the [Fifth Force](#) is labeled “[anomalous](#)” and people bluntly refuse to re-examine their [gravitational hypotheses](#). I will never, in no circumstances, resort to calling the modified gravity “[magic](#)”. No way.

By 2030, we must be fully ready to (i) implement [spacetime engineering](#) based on the [Fifth Force](#) to avoid the devastating [climate catastrophe](#), and (ii) propose a plan for replacing the current power plants, coordinated with [EU Directorate-General for Energy](#). The technological innovations may also include [nanoscience](#) and [molecular biology](#), and should be introduced with great care to minimize the inevitable [disruptive effects](#) on our society.



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?](#)

Time is [running out!](#)

31 March 2023, 12:52 GMT

Chapter 1

Plato's *Allegory of the Cave* is not limited to [epistemology](#). In [March 1994](#), I proposed to extend the [Platonic World](#) ([Fig. 15](#)) to include *everything* we label with physical and psychological terms – the common source of matter and psyche. In the doctrine of [trialism](#) (April 2000), the common source of both matter and psyche is pictured as “trunk” ([p. 11](#)). The latter is not matter nor psyche, which is why it (not “He”) does not have matter-like ‘windows’ nor psyche-like ‘windows’ through which *we* could ‘look’ at it.

Here we reach Leibniz's *windowless monad* ([Monadology 7](#)). It could be an abstract dimensionless geometric point – “that which has no part” ([Euclid](#)). It could be the [Noumenon](#) and the [Unmoved Mover](#) as well. We do not know the intrinsic nature of the Platonic World. The purpose of these efforts is to avoid a logical contradiction known as ‘[infinite regress](#)’. For example, the Aristotelian [Unmoved Mover](#) is needed as a cutoff on the otherwise endless sequence ‘[turtles all the way down](#)’ in the [arrow of Time](#). Another example is the [homunculus](#), a hypothetical creature in the human brain, which controls the whole brain, but needs another homunculus for its brain, *ad infinitum*. Thus, the [Platonic World](#) is suggested as the ultimate cutoff on *our* efforts to understand Nature. We cannot fully understand Nature as ONE, because our cognition is relational: we can understand a set of things $\{A\}$ iff we can suggest another set $\{\text{non-}A\}$ *with respect to which* $\{A\}$ makes sense. It will be impossible to comprehend some primordial substance that may potentially include [absolutely everything as ONE](#). We can neither prove nor disprove such claim, and can only hope that Mother Nature is smarter.

Let's try something more palatable – the idea of ‘set’ proposed by [Cantor](#): “A set is a gathering together into a whole of definite, distinct objects of our perception or our thought”. It should be easier to understand, because every comprehensible idea belongs to a *finite* set ([Quora](#)). Mathematicians would point to [Zermelo-Fraenkel axiomatic set theory](#), but the latter is not complete (explanation [below](#)) and will be augmented with new axioms in order to include the metaphysical ansatz [above](#). In a nutshell, I propose a new *empty set* ([December 2022](#)) in the so-called Maximal Set Theory (MST) and Finite Infinity ([FI](#)) which, obviously, cannot be fully comprehensible.

Let me start with the so-called Axiom of Absolute Set (AAS), which unites the new *empty set* with the new [complemental universal set](#) ([Wolfram](#)). It

is *very* important to stress that the new *empty set* and *universal set* pertain only to the **Platonic** World, which we assume (p. 1) to be an *atemporal* and *pre-geometric* substance resembling (but not identical to) the **human mind**.

1. Axiom of Absolute Set (AAS).

There exists a single *absolute set*, which unites the *absolute empty set* with its **complemental** *absolute universal set* into one single *absolute set*.

Fig. 1 below shows the *pre-geometric* and **non-denumerable ideal** point(s) of the **Platonic** World as ONE (AAS). It (not “He”) is both ‘one’ and ‘many’.

ONE single **point** stretched to **infinity**

Fig. 1

2. Axiom of **Completed Infinity** (ACI), relevant to the **Platonic** World (AAS).

3. Axiom of Relational Set (ARS).

There exist infinitely many *relational* sets, including *relational empty sets*. All *relational* sets conform to the idea of ‘set’ proposed by **Georg Cantor**: “A set is a gathering together into a whole of definite, distinct objects of our perception or our thought”. Fig. 2 below shows the real points of the **real number line**, with numerical labels from **infinite counting** (ACI).

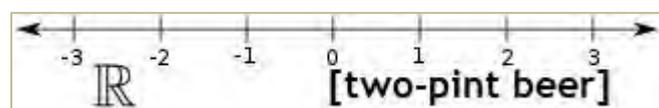


Fig. 2

4. Axiom of **Potential Infinity** (API), relevant to the **physical world** (ARS). The behavior of *potential* infinity matches the unlimited **infinite regress**.

Corollary 1: The **Platonic** World (ACI) is partially comprehensible, as it might include the non-relational *absolute set* as ONE (AAS). Corollary 2: The physical world (ARS) can be partitioned into infinitely many (API) **finite sets** with **metric**, **boundaries** and **Archimedean topology**. Corollary 3: The fusion of AAS & ACI with ARS & API leads to Finite Infinity (FI); see Fig. 5.

Before going to the Maximal Set Theory (MST) and its precursor from **July 1997**, I will offer a brief explanation of the “**mind-like**” **Platonic** World,

which is also based on sets, but the *number* of elements (**cardinality**) of these **Platonic** sets is **flexible**. We can imagine a trivial ‘set’ as ‘gathering together into a whole of definite, distinct objects of our thought’ (**Cantor**), but the **Platonic** sets are *not* physical objects. We can easily visualize a bag of *physical* apples, and the bag itself will be the ‘set’ that gathers together into a whole an exactly fixed (not **flexible**) number of apples separated by non-apples, say, by air molecules (Fig. 3). This is *not* the case with **Platonic** sets, however. We *cannot* picture a **Platonic** set in the same way we do with the *physical* relational sets (**Corollary 2**) shown in Fig. 3. For example, we *cannot* picture the quantum **Platonic** set called **quantum wave function** (Fig. 4): the quantum **Platonic** ‘bag’ and ‘apples’ are *not* physical objects, and only the quantum **Platonic** ‘apples’ can be *physicalized* (**Chapter 2**).



A bag (set) of 6 apples

Fig. 3

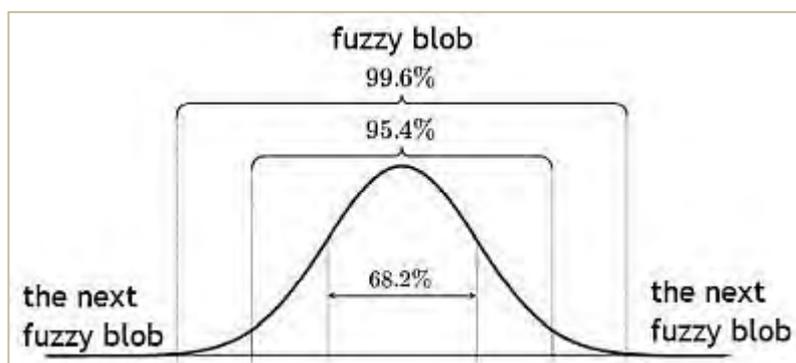


Fig. 4

Regarding the **quantum wave function** (Fig. 4), **Erwin Schrödinger**, the father of quantum mechanics, explicitly stressed that “in the catalog not just new entries, but also deletions, must be made” (*The Present Situation in Quantum Mechanics*, 1935). Thus, the cardinality of quantum **Platonic** sets is not fixed with a number (Fig. 3), but is **flexible**. We are dealing with the **Platonic** World, which is “just in the middle between possibility and reality” and has “only a tendency toward reality” (**Werner Heisenberg**). The same tallies to our cognitive **Platonic** sets, which are ‘open’ to new entries and to deletions, which is why their cardinality is indefinite and **flexible**. Not sure? See for yourself, with your brain & mind, [here](#).

There is no genuine “uncertainty” in the quantum **Platonic** World, but a fundamental **flexibility**: God casts the die, not the dice (**Albert Einstein**).

Let me zoom on our cognitive **Platonic** sets and derive two extreme cases that are the bedrock of Maximal Set Theory (MST): the *absolute empty set* and its complemental *absolute universal set* (**AAS**). Later (**Chapter 4**), I will apply **Fig. 1** to **quantum cosmology** (no “big bang”) and **physical theology**.

Consider the inverse-proportional relation between the volume and content of concepts (cognitive sets): the bigger the volume the smaller the content. Take for example the sets ‘furniture’ and ‘chair’: the first set has a bigger *volume*, in the sense that ‘furniture’ is more general than ‘chair’, but the set ‘furniture’ has smaller specific *content* compared to the set ‘chair’. A very general and abstract concept corresponding to the set ‘thing’ covers almost everything we could imagine, and has almost maximal volume viz. almost minimal specific content. The ultimate limit of this trend is some UNSpeakable **Platonic** set that has *exactly* infinite volume and *exactly* zero intrinsic content. It **takes part** in all **relational cognitive sets** emerging in a dipole-like structure: we could comprehend the concept of ‘chair’ because we can think of something that is ‘non-chair’, and with respect to which the concept of ‘chair’ makes sense. But in the case of the UNSpeakable **Platonic** set, we cannot formulate any concept/set that is not pre-included in it, and now we cannot attach *any* meaning to it. Briefly, the ‘thing’ has become the Kantian **thing-in-itself**. Surely this sounds familiar: the set of all sets is not a proper set, as Georg Cantor himself realized in **1890s**. But MST includes both the **relational sets** and the **non-relational Platonic sets** we *cannot* think about: the *absolute empty set* with *exactly* zero content and its complementary *absolute universal set* with *exactly* infinite volume.

The **Zermelo-Fraenkel axiomatic set theory** covers only the *relational* sets (**ARS**), which is why it cannot prove nor disprove the **Continuum Hypothesis**. We also read in **Wikipedia** that “an open set is a generalization of an open interval in the real line. (...) Intuitively (Sic! - D.C.), an open set provides a method to distinguish two points.” Look at the Continuum in Fig. 5 below.

The red set is an open set, and the blue set is its *boundary* set. How can you “distinguish two points”, red and blue? You have to *count* them, and then install some gap “between” the points, which is neither a ‘red point’ nor a ‘blue point’. This so-called “intuition” in distinguishing “two points” is **not even wrong**. *In rebus mathematicis errores quam minimi non sunt contemnendi* (**George Berkeley**).

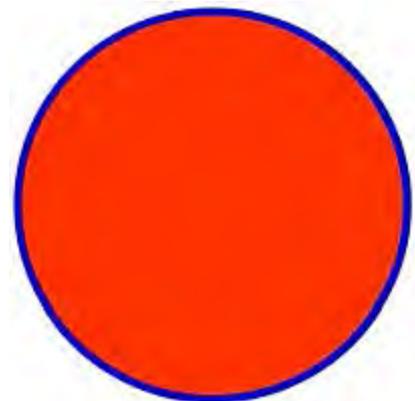


Fig. 5

Only Finite Infinity (FI) can present **the Continuum** – there is no “gap” between the geometric points, because the “gap” is *exactly* zero (**AAS**).

We certainly can introduce numerical labels to *absolutely all* geometric points (Fig. 2) from the real number line (number theory), but only because the **Platonic** World as ONE (Fig. 1) has “counted” *absolutely all* points (FI). If we use just the *relational sets*, we will be like Chuck Norris (Fig. 6).



Fig. 6

This is the crux of Finite Infinity (FI). Now we will insert Fig. 1 and Fig. 2 in the *atom of geometry* and reveal the *arrow of Time* (Slide 1 and Fig. 7): the **Platonic** World as ONE in the **future**, and the **physical world** in the past.

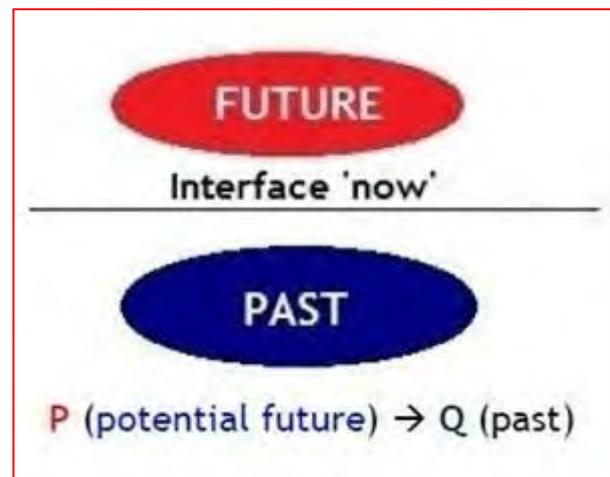
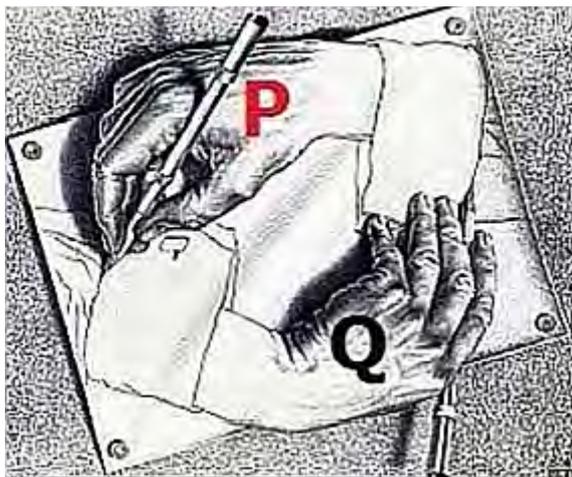


Fig. 7

The elementary shift $P \rightarrow Q$ is *finite* in size, but is not dividable. It is the *atom of geometry* – “that which has no part” (Euclid) – and the solution to Zeno’s *paradox of motion* and Aristotle’s *Unmoved Mover en bloc*. Q.E.D.

In the next Chapter 2, I will introduce the new *hyperimaginary numbers* and apply many established facts from *Mathematics*, *life sciences*, *physics*, *theology*, and *psychology* to (i) the *arrow of Time* and (ii) the *Fifth Force*.

Chapter 2

The hallmark of the **Platonic World** is its *mode of existence*, which matches exactly the omnipresent **Aether** in the **rest frame of photons**. The **physical time** in the Aether is exactly **frozen**: “nothing ever moves therein; nothing happens; nothing changes” (**Robert Geroch**). The duration of the physical time there corresponds to the new *hyperimaginary* “distance” from one single geometrical point to itself: it is *exactly zero* (**AAS**). I will upgrade the real number line (**Fig. 2**) with the *hyperimaginary numbers* introduced in **2016** (p. 5 in **Fl.pdf** and pp. 6-8 in **Force.pdf**) and depicted in **Fig. 8**.

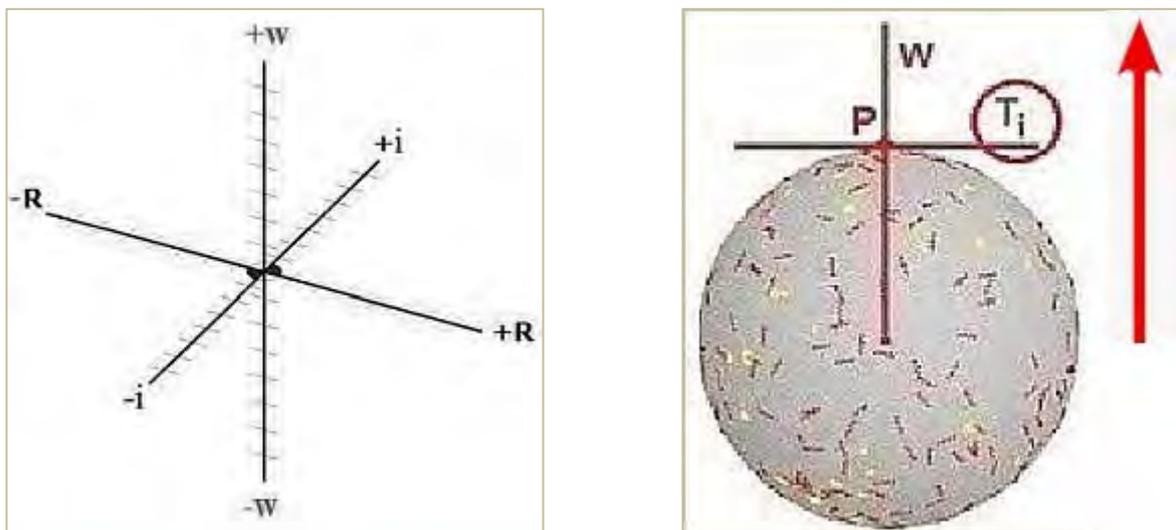


Fig. 8

The Heraclitus’ **arrow of Time** (*Panta rhei*, see **Fig. 7**) is **unobservable** with light (**Kevin Brown**): Time is an **imaginary variable**. The latter possibility was explored by **Arthur Eddington** in 1920, and was presented again in **2020**. Once the Heraclitus’ Time is *squared* (Sic!), it becomes the physical time ‘**as read with a clock**’: the *hyperimaginary* component of Time along the axis **W** (**Fig. 8**) is nullified ($W^2 = 0$) and the physical time shows up with *negative sign* ($i^2 = -1$) in the 4D **spacetime interval**. The squaring “**happens**” on **null** surfaces at which the **complex** and the *hypercomplex* components of Heraclitus’ Time (see the tangential and **normal directions** in **Fig. 8**) are **indistinguishable** – not identical. Briefly, this is the “**collapse**” ($W^2 = 0$) of the quantum **Platonic World** (**Fig. 4**) along the axis **W** (**Fig. 8**). We use the **non-squared** Heraclitean Time along **W** in the **intact quantum world**, and can **tweak** the *complex waves* (**Chen Yang**) **before** they move into the past (**Fig. 7**) to show their **fleeting physicalized real part** – one part at a time –

in the **bivalent** physical world. Thus, the **quantization of 4D spacetime** is introduced from the outset (Fig. 9) with **the two modes of 4+0 D spacetime**.



Fig. 9. Every **consecutive** ball is being **re-created**.

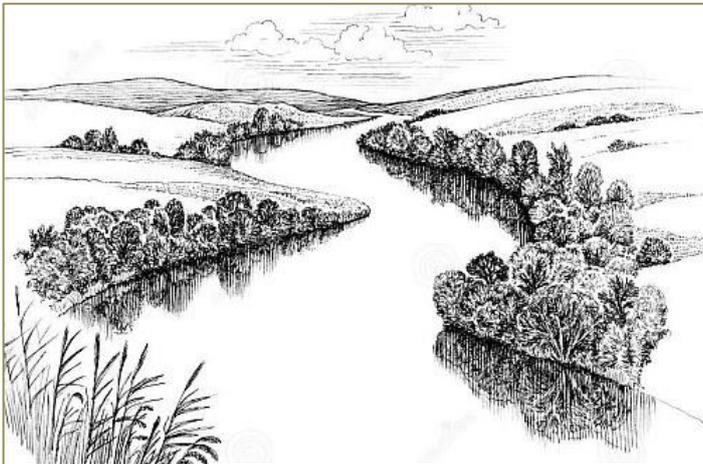
In the drawing above, the ‘movie reel’ itself is the ultimate background of the 4D physical world: the **Platonic Aether** in the **rest frame of photons**. Again, the **Platonic** background in Fig. 9 is **exactly re-nullified** due to the “collapse” ($W^2 = 0$) of the quantum **Platonic World** (Fig. 4) along the axis **W** in Fig. 8. The 4D physical world *and* the dimensionless **noetic world** are illustrated with successive ‘balls’ (Fig. 9) projected on the ‘movie screen’. We all, physically and mentally, are part and parcel of the ‘movie screen’, so if the ‘movie operator’ decides to take a coffee break, **we won’t notice**.

NB: Can we model the *global* ‘movie operator’ (John 1:1) at **sub-photon** level **W** (Fig. 8) “inside” **null surfaces** with **Mathematics**? *Qui vivra verra*.

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**.

Let’s move to the **geometrization of gravity** empowered by the **self-acting Fifth Force**. Otherwise gravity will have to be some new physical field or, even worse, a mythical “**ghost**”. What we **know for sure** is that “gravity *is* the unequable flow of time from place to place” (William Unruh), which of course requires the fundamental **arrow of Time**. Now we face a bundle of puzzles, which I will try to unpack and ‘connect the dots’, as best as I can.

We know for sure that the *force* of Time exhibited in the **arrow of causality** cannot be delivered by any **physical stuff** (forget the idiotic “**dark energy**”). The **unequable flow of Time** is non-relational, in the sense that there can be no *physical* object placed at **absolute rest** on the banks of Heraclitus’ river, with respect to which one could **time** the unequable *rate* of water flowing downstream. We can’t say that the ‘water’ flows with the rate of ‘one second per second’, for example. If we could, we will have to show some *physical* banks of Heraclitus’ river (Fig. 10) at **absolute rest**, and the Theory of Relativity will be demolished. Thank God, this is impossible.



Everything changes and nothing remains still – you cannot step twice into the same stream, for fresh waters are ever flowing in upon you (**Heraclitus**). Pin down the phrase ‘**fresh waters**’: it is the fundamental difference between 4D spacetime in the **orthodox model of spacetime**, and 4+0 D spacetime equipped with **two modes of spacetime**.

Fig. 10

Time flows also in all physical systems that are at relative rest in their **rest frames** and do not “consume” space. See **Newton’s apple** hanging on the tree at rest (Fig. 11.2), which experiences the non-relational “free fall” (Fig. 11.1) in the **principle of equivalence**. Time and **gravity** make a bundle.

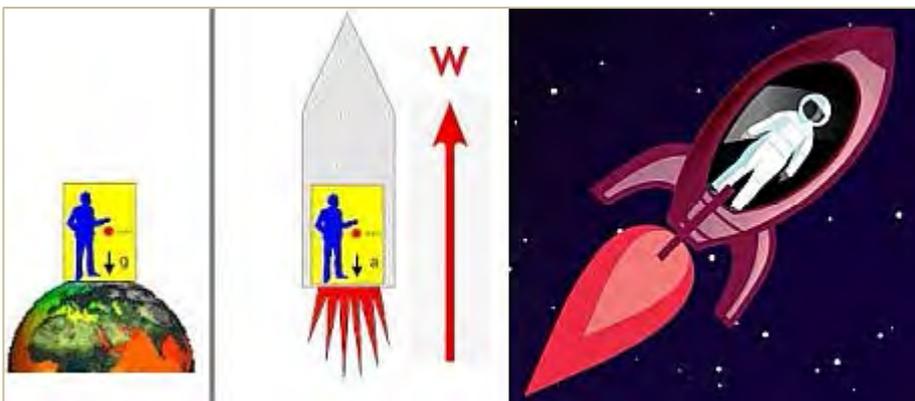


Fig. 11.1. Compare it to Fig. 8.



Fig. 11.2

Gravity is interwoven with the non-relational (Fig. 10) **arrow of Time**. The “dark space” in Fig. 11.1 is the *atemporal Platonic* Aether (Fig. 9 and p. 2).

If you disagree, can you recover the *physical* force of gravity from those “components of the metric tensor” (Mikio Nakahara) that (allegedly) define “notions such as time, distance, volume, curvature, angle, and separation of the future and the past” (Wikipedia)? No you **can't**. The first reason is that gravity is *not* a ‘natural force’ (Zhaoyan Wu), because the spacetime metric “field” *cannot* carry energy-momentum. If it could, gravity will be yet another physical field (p. 7). And the second reason is that gravity is fundamentally **nonlocal** phenomenon (Laszlo Szabados). Just **forger GR**.

What could be the phenomenon that delivers *gravitalized* (Sic!) mass, energy and **angular momentum** to the physical world? It is the **Platonic** world in the potential **future** (Fig. 7), which again requires the **arrow of Time**. To quote Arthur Conan Doyle, when you have eliminated the impossible, whatever remains, however **improbable**, must be the truth. Sounds encouraging, but we will have to dig deep in the **orthodox model of spacetime** and suggest brand new **gravitational physics** based on so-called Relative Scale (RS) spacetime (Chapter 4).

Final words to finish this chapter: genuine proprietary gravitational energy *per se* does not exist. Instead, matter and fields are being *gravitalized* by the **Fifth Force** depicted in Fig. 12 below. By the same token, there is no quantum energy *per se* (Fig. 4). We have only *gravitalized* and *physicalized* manifestations of *positive* mass in the 4D physical world occupying the local (physical) mode of **4+0 D spacetime**. On 8 November 2015, I suggested the so-called *evolution equation* (still in **symbolic form**), which deals with the **re-creation** of exclusively positive mass, both *gravitalized* and *physicalized* (Chapter 4). Perhaps we only need **Mathematics** to reach **quantum gravity**.



The **monad** itself has no *windows* through which something 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 (AAS) only from the **self-acting force** of its glove.

Fig. 12

Chapter 3

Some of it plus the rest of it is all of it ([Baldy's Law](#)). True or false? Well, it depends. Baldy's Law holds true only for the inanimate macroscopic world at the length scale of tables and chairs at which the quantum effects (apart from some rare [quantum effects](#)) are vanishing small and can be neglected. Once we move to the [Platonic quantum world](#) ([Fig. 4](#)), we encounter an entirely different world governed by the quantum [matrix](#) ([p. 7](#)). To explain the [matrix](#), I will quote two famous physicists ([p. 8](#) in [FI.pdf](#)).

“The stuff of the world is mind-stuff,” said [Arthur Eddington](#). [Max Planck](#) elaborated as follows: “There is no matter as such. All matter originates and exists only by virtue of a force which brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent spirit. This spirit is the [matrix](#) (emphasis added - D.C.) of all matter.” But the Platonic [matrix](#) is not “mind-stuff”. It is the *atemporal Platonic* world ([Slide 14](#)) casting its [matrix](#) in the *potential future* ([Fig. 7](#)). We have *three* types of [matrixes](#): quantum, gravitational, and biological; the latter was demonstrated with the experiment at [p. 7](#). There is no mind/consciousness “attached” to every elementary particle and galaxy. Only their quantum-gravitational [matrix](#). To avoid any misunderstandings, I will explain the doctrine of *trialism* (April 2000), called previously ‘[fundamental dualism](#)’.

The [Platonic World](#) ([AAS](#)) *cannot* be observed, ever. We can observe only its two *complemental* “gloves” ([Fig. 12](#)), called matter (*Res extensa*) and psyche (*Res cogitans*), correlated by their common [matrix](#) (*Res potentia*).

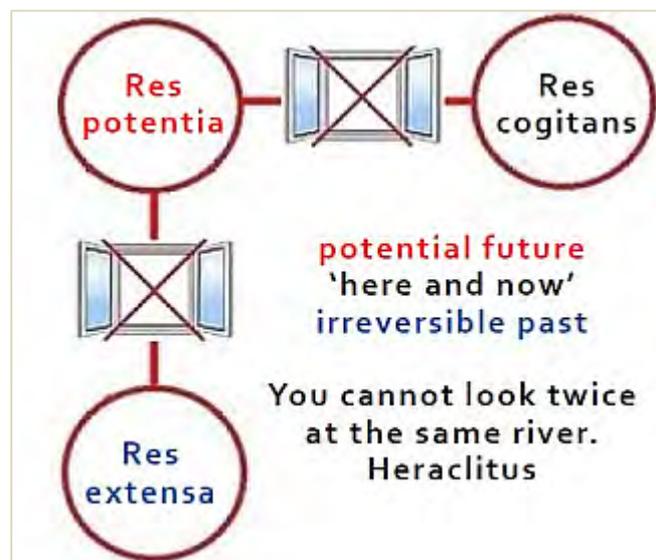


Fig. 13

Again, we are only “gloves” (Fig. 12), both physical and mental, like the consecutive balls (Fig. 9) projected on the ‘movie screen’ (not shown). The three types of **matrixes** in the *potential future* (Fig. 7) offer the possibility to gently tweak the physical world with **spacetime engineering**. In Fig. 14, the **matrix** is pictures as a carrot. Instead of ‘counting’ (p. 7), just swing the carrot and the donkey will carry you *and* the cart to your destination.



The principal question is how to develop feedback from the *atemporal Platonic* “carrot” and get empowered by the **self-acting Fifth Force** (Fig. 12): follow the Law of Reversed Effort. You will notice that your ability to perform **self-action** has *increased*. It’s not like **Baron Münchhausen**. **Newton’s 3rd law** is not valid here. Simple, no?

Fig. 14

The Law of Reversed Effort is known for many centuries: to the mind that is still (*wu-wei* or non-action), the whole universe surrenders (**Chuang Tzu**). You only need to let the **Fifth Force** (Fig. 12) unfold quietly into your **soul**.

Also, examine carefully Fig. 13 and notice two different tracks in **spacetime engineering**, which I called ‘spiritual’ and ‘industrial’. If you look at Nature from her spiritual track, you may think that Nature is God (**John 1:1**), but if you choose the **industrial track**, you may think that Nature is the Universe as ONE. Which one is true? Both. We are like an Eskimo who has never seen and will never see an elephant in his life, yet he can make observations on elephant’s **trunk** with two complementary devices, which measure either the properties of Eskimo’s nose, or those of Eskimo’s arm. At the end of the day, the Eskimo may acquire a vague feeling about the doctrine of **trialism**, but will never understand the “trunk” (**AAS**). A small group of Eskimos are ignoring the ‘trunk’ and speculate about a direct ‘nose-arm’ connection, which leads to parapsychology (**dualistic interactionism**), whereas the vast majority of (otherwise **smart**) Eskimos blindly follow their religion known as **anti-theism**. But we don’t need *any* religion. Only Mathematics (**AAS**).

In what follows, I will explain a ‘mild’ form of spacetime engineering we all practice every day, and will mention some ‘exotic’ predictions of my theory (Fig. 14), which are camouflaged as “**street magic**”, regrettably. Finally, I will explain in **Chapter 4** my idea of harnessing the **gravitational rotation**.

We are always guided by our **future** (**matrix** as “carrot”, **Fig. 14**). In the physiology of activity developed by Nikolai A. Bernshetin (p. iii, p. 13, and ref. [49] in **Intro.pdf**), every perception and action is guided by the crucial *difference* between the desired **future** state (*Soll-Wert*) and the current state (*Ist-Wert*), denoted delta-Wert (ΔW). For example, you sit at a dinner table on which there is a glass of water. Suppose you are thirsty (*Ist-Wert*) and your **desired future state** (*Soll-Wert*) is to drink the water and reach your $\Delta W = 0$. You stretch your arm toward the glass of water, in such way that the states of your arm (*Ist-Wert*) are being **continuously adjusted** by **anticipating** the final goal (*Soll-Wert*) at which you will grab the glass and drink it ($\Delta W = 0$). But you don’t stop there – your desired **future** state (*Soll-Wert*) is a complex set of various targets in your *Soll-Wert*-directed behavior. Sounds simple, but it isn’t – recall the experiment with your **self-acting** brain (p. 7). Unlike, e.g., the arm of a robot, the human arm is not designed to perform *any* specific movement, thanks to which you can perform *any* movement. This is the crux of physiology of *activity* and the mundane or ‘mild’ **spacetime engineering**. Robots are not *active*, because they are not guided by their *potential future* (*Soll-Wert* or “carrot”, see **Fig. 14** and **Fig. 7**), but by the software programs installed in the hardware.

As to the ‘exotic’ predictions of the theory (**Fig. 14**), recall the bag (**set**) of apples in **Fig. 3**: the bag *itself* is not just ‘knowledge’, as some physicists suggest in their convoluted interpretations of **quantum mechanics**. You may not insert ‘knowledge’ in the quantum world. That’s sheer parapsychology.

You only need to (i) *expand* the ‘**bag**’ until it includes your body, and (ii) lift your body up in the air to show “**street magic**” (and get a lot of cash). Or do it just for fun (and scratch your ego) and enjoy your Chinese “**magic**”.

Sadly, our society has acceptable **stereotypes** only for “**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. Besides, they **utterly refuse** to question their **gravitational hypotheses** in the first place. Can’t win. And what will happen if I tell journalists that I am suggesting to exploit the **gravitational rotation** and develop new energy technology to combat the **climate crisis**? I will hurt many *highly* influential people in the oil business (**Rachel Maddow**). To be clear: I cross the street only on green, don’t take drugs, and have absolutely no desire to commit suicide. Anyway.

To wrap up what has been said so far, I will expand the main proposal in [Fig. 13](#) and mention the sole remark it attracted since [31 October 1989](#), along with my (probably biased) answer. [Fig. 15](#) below shows the two *complementary* paths ([p. 11](#)) to understand Nature, as both God and ONE.

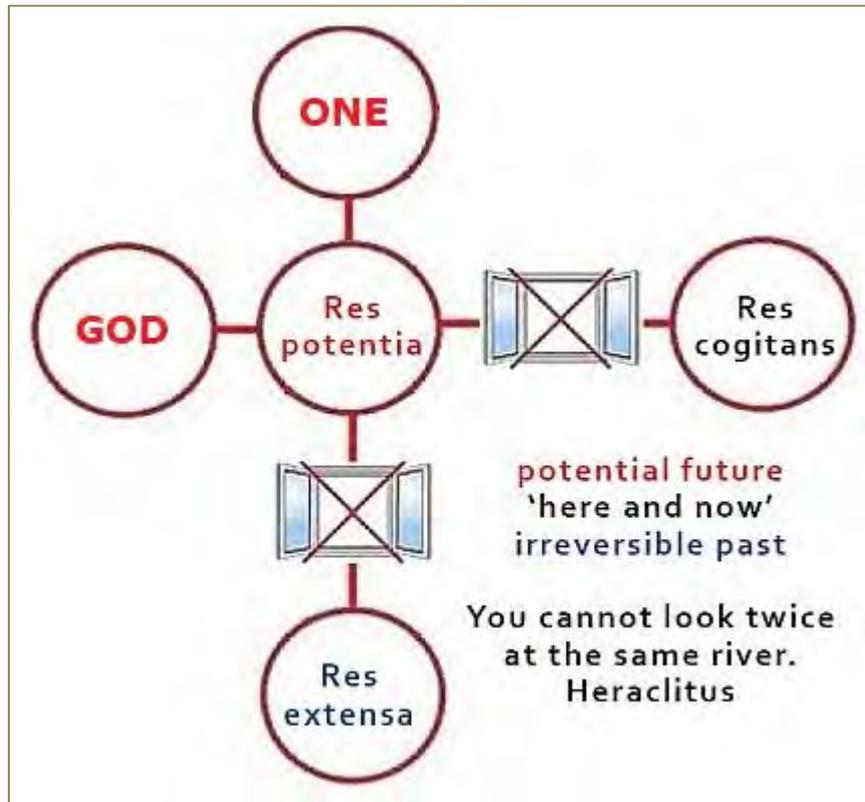


Fig. 15

The horizontal ([spiritual](#)) track toward Nature-as-God ([p. 7](#)) is different from the vertical ([industrial](#)) track toward Nature-as-ONE, as explained at [p. 11](#). The advantage of the spiritual track is that we can explore it by developing particular skills in [spacetime engineering](#) (e.g., [Reiki](#)), which do not need the vertical (industrial) track viz. quantum gravity and cosmology. It is like the fact that we don't need to know the anatomy and physiology of [gastrointestinal tract](#) to process the food we eat. But my proposal to use [gravitational rotation](#) for resolving the [climate crisis](#) ([Chapter 4](#)) absolutely requires [quantum gravity](#) from the vertical (industrial) track – the so-called *evolution equation* is still in [symbolic form](#) ([p. 9](#)). We do not know how to 'expand the bag' ([p. 12](#)) until it includes the quantum-gravitational vacuum entangled with the human brain and its 'local movie operator' ([p. 7](#)). Also, we do not know whether the three [matrixes](#) (quantum, gravitational, and biological, see [p. 10](#)) indeed overlap. Not surprisingly, people criticize my project for being "too speculative". Relative to ... *what*? To [GR textbooks](#)?

Thus, the arrow of Time (Fig. 7) animates the matter (*Res extensa*) and the psyche (*Res cogitans*) by their common **future** (*Res potentia*) depicted in Fig. 15. The **future** does *not* exist in the physical world (Fig. 10) in which everything is just ‘gloves’ (Fig. 12). Only the **psyche** (*Res cogitans*) resides in the **future**. We cannot understand GOD-and-ONE (Fig. 15) as *relational* set (ARS) and question its “purpose” and “goal”, *ad infinitum* (p. 1): AAS.

Yes, the metaphysics is **heavy**, but is widely known. Then we apply many **facts** (p. 9) on our metaphysical ‘skeleton’, and develop the theory like a Husserl’s *noema* – an indefinite whole, which is being gradually filled with concrete content (Fig. 8 and Fig. 9).

Until this point, nothing is new (apart from some **interpretations**). But I will have to move further, because **quantum gravity** requires a **brand new**, to my knowledge, theory called Relative Scale (RS) spacetime.

Chapter 4

We do not accept absolute *physical* phenomena, such as length (Wikipedia). Everything in the *physical* world is relational (ARS). See below the idea of Relative Scale (RS) spacetime *assembled* by the arrow of Time (Fig. 7): the *interpenetration* of **the Large and the Small** (Fig. 16).

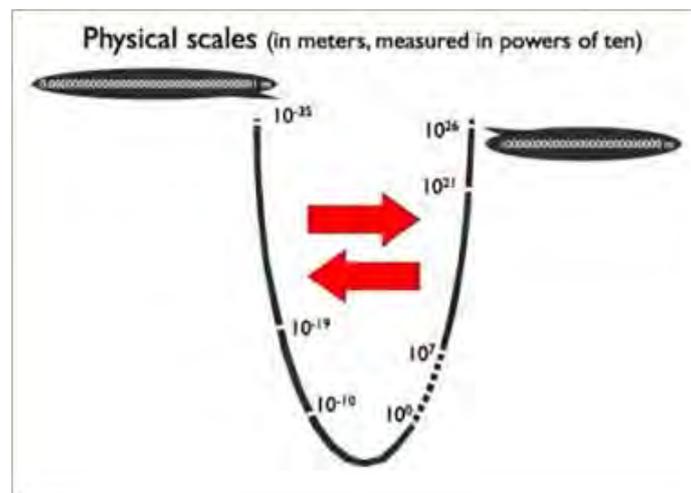


Fig. 16. Read p. 2 in [RS.pdf](#).

In one sentence: at **macroscopic** scale, a table with length 1m is RS-small with respect to a **galaxy** and RS-large with respect to the **proton**, yet in the quantum-gravitational world the RS-length of a galaxy and the RS-length of the proton are *indistinguishable* due to their **fusion** (Fig. 16). The ‘length’ is a relational *global* phenomenon, which creates (Fig. 17) gravity **locally**.

Picture the 4D spacetime like a warehouse with finite length (FI) that is dynamically *assembled* (zipped) and *rendered* by the arrow of Time (Fig. 7) with *variable rate* of Time, “from place to place” (William Unruh).

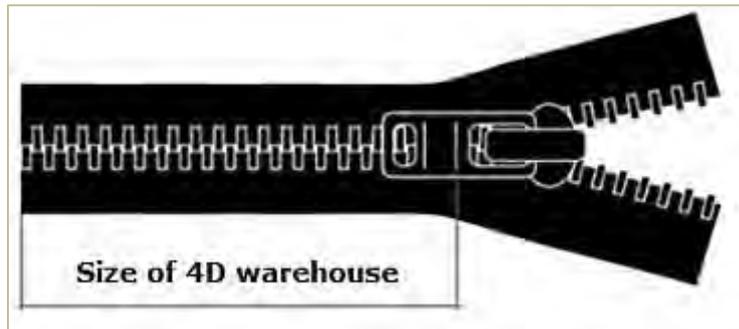


Fig. 17

The RS-smaller zipped intervals assembled with lower speed (the Small) are like the RS-greater intervals assembled with greater speed (the Large).

The 4D spacetime of the ‘warehouse’ is *quantized* from the outset (Fig. 9), thanks to the *geometrization of gravity*. The “gaps” in the 4D spacetime continuum are invisible with light (Macavity): *perfect continuum* of 4+0 D spacetime endowed with *two modes*, global (Platonic) and local (physical). We have quantum-gravitational spacetime governed by ‘the general rule’, and will move to the *global* phenomenon creating Large and Small (Fig. 16), which also creates attractive and repulsive gravity *locally*.

To explain how Nature creates the Small and the Large, suppose we have three observers who can see the physical world only *after* the 4D spacetime has been *rendered/created* (Fig. 17), just as we can see the evolving state of the Sun only *after 500 sec*, after the light from the Sun reached Earth. The *absolute luxonic Time* is always *exactly nullified* in the physical world pictured with the expanding *surface* of the cosmological “balloon” (Fig. 8).

Call the three observers Alice, Bob, and Carol (pp. 3-5 in RS.pdf). They stay at *macroscopic* scale, at a table with length 1m. Now imagine that Bob can leave and shrink into the *quantum world*, whereas Carol can inflate into the large-scale world of a typical *galaxy*. Now Bob will be RS-small with respect to Alice, and Carol will be RS-large with respect to Alice. True, but *only* with respect to Alice, because *at the same instant* the RS-length of Bob and that of Carol will be *indistinguishable* as well, due to their *fusion* (Fig. 16).

How is this possible? Let me suggest an analogy with *variable* frame rates (FPS): if we shoot 1s clip (B) with 15 FPS, and 1s clip (A) with 30 FPS, and 1s clip (C) with 60 FPS, the three finite clips will produce movie reels with different length ($B < A < C$), yet their duration will be *indistinguishable*: 1s.

Our case is nontrivial, because the **nondenumerable** “frames” (Fig. 9) do not have boundaries (Fig. 5), and their **matrix** is unobservable with **light**.

Point is, in RS spacetime the *global* phenomenon creating Large and Small (Fig. 16) creates attractive and repulsive gravity *locally*. The attractive form of gravity is caused by “shrinking” the metric of spacetime locally, along with the repulsive gravity caused by “inflating” the spacetime metric locally, which leads to **dynamically adjusted** (Sic!) tug-of-war equilibrium (p. 8 in [Newton.pdf](#)). Also, the fictitious “**dark energy**” is eliminated and replaced with the **Fifth Force** of ‘gloves’ (Fig. 12) and ‘jackets’. Thanks to the **asymmetric** arrow of Time (Fig. 7), the 4D spacetime is inhabited by *physicalized* viz. ‘**retarded light**’ driven by re-interpreted “**negative mass**”. The latter is directly unobservable (recall the “**quarks**”).

Briefly, the Fifth Force is the *physicalized* ‘**push**’ (Fig. 18) by Aristotle’s **Unmoved Mover** and Virgil’s *Der Geist bewegt die Materie*.



Fig. 18

All this leads to the **quantum-gravitational vacuum** in RS spacetime (Fig. 16) in which the extreme cases of (i) *exactly* infinite deflation of spacetime metric and (ii) *exactly* infinite inflation of spacetime metric correspond to a single dimensionless geometric point and to *exactly* infinite world (AAS). Are cases (i) and (ii) fused in Nature-as-ONE and in Nature-as-GOD (Fig. 15)? Perhaps we need **Mathematics** (p. 7) to understand the question, or rather to understand whether the question is an UNdecidable proposition (p. 14).

After so much metaphysics, recall the famous **Hail Mary pass** in **basketball**, which refers to the Catholic “Hail Mary” prayer for strength and help. You don’t need any religion or **metaphysics** to make your best shot. You don’t need the *evolution equation* (p. 9) either. Just follow the Law of Reversed Effort (Fig. 14) in spacetime engineering ([SEM.pdf](#)) and watch the video lectures at YouTube and Vimeo. They will be available by Christmas 2023.

May the **Fifth Force** be with you!

Platonic World: The Force of Life, Time and Gravity

Video lectures at Vimeo and YouTube

D. Chakalov

chakalov.net

<https://chakalov.net/book.pdf>

VL1. The Force of Time. Prerequisites: [Force.pdf](#) and Chapters 1, 2 and 3.

What is the [Platonic World](#) and the [Fifth Force](#)? In Case A (see below), the magnitude of [the force of Time](#) is unimaginably small yet *not* zero, like the vacuum energy estimated around 6×10^{-10} joules per cubic meter ([J. Baez](#)).

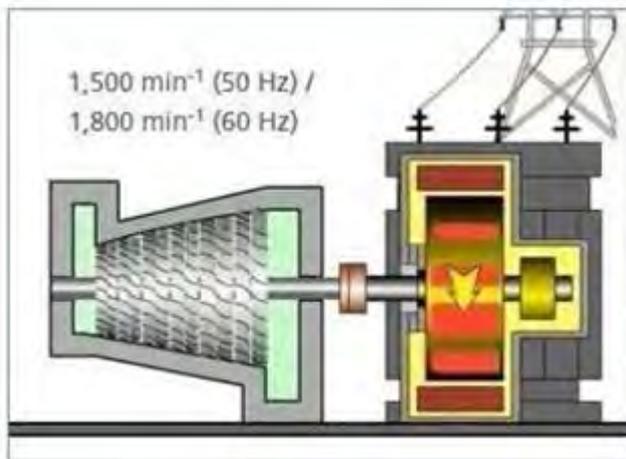


Case A: Newton's [laws of motion](#)



Case B: No "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: watch it at Vimeo or YouTube. But can we increase the effect to create [free energy](#)?



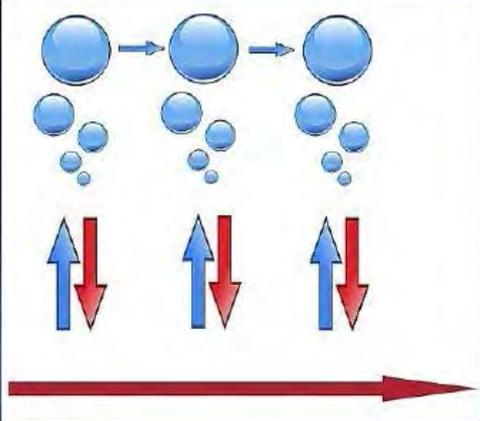
My urgent proposal for producing unlimited electricity is based on [gravitational rotation](#), as gravity can rotate a [whole galaxy en bloc](#). Just spin the [steam turbine rotors](#) in the power plants with spacetime engineering. No need for water supply, heat, [coal](#), nor hazardous [nuclear fuel](#). We won't need [ITER](#) either. Is this possible? [Why not?](#)

Time is [running out!](#)

VL2. Spacetime Engineering. Prerequisites: [SEM.pdf](#) and Chapters 3 and 4. Watch it at Vimeo or YouTube. Additional info is available upon [request](#).

VL3. The Platonic Matrix. Prerequisites: Facts. I explain how the three Platonic **matrixes** (p. 10) – quantum (Slide 7), gravitational (Slide 12), and biological – are backed by indisputable facts, and wrap up with the general rule and Schrödinger’s article from 1935 (p. 3). Can’t argue against facts.

Quantum Reality: Charles Wilson, 1911



The diagram illustrates the Wilson cloud chamber experiment. It shows three stages of a particle track. In each stage, a blue arrow points up and a red arrow points down, representing energy-momentum exchanges. A large red arrow at the bottom points to the right, indicating the direction of the particle's path.

Can we explain the **red** and **blue** arrows in Wilson cloud chamber?

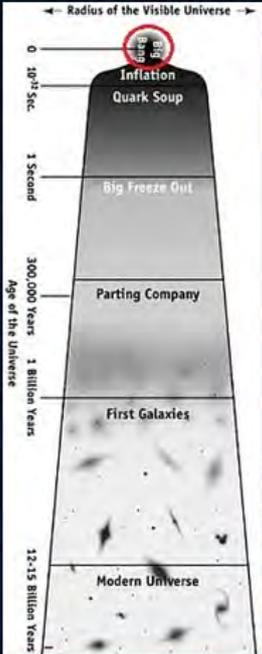
Can we explain *consecutive* energy-momentum exchanges between the quantum **particle & wave** and its **macroscopic** environment? Are quantum waves with **complex** phases (Chen N. Yang 1987) physical reality or *physicalizable* reality (Slide 15) “just in the middle between possibility and reality” (Heisenberg 1958)? What is the origin of **time** in Schrödinger equation? Can **clocks** read it?

Yes and No: The matrix (Chakalov 2016).

Slide 7/19

Slide 7. See also Slide 9 and Slide 10.

Atemporal Quantum Reality: Quantum Cosmology



The diagram shows a vertical timeline of the universe's expansion. At the top, it is labeled 'Radius of the Visible Universe'. The timeline is divided into several stages: Inflation (at 10^{-35} Sec), Quark Soup (at 1 Second), Big Freeze Out (at 300,000 Years), Parting Company (at 1 Billion Years), First Galaxies (at 12-15 Billion Years), and Modern Universe (at 12-15 Billion Years). The timeline is labeled 'Age of the Universe' on the left.

Without quantum cosmology based on the quantum-gravitational **matrix** of spacetime, we would need some Biblical “miracle” to raise a robust Lorentzian metric within 10^{-30} seconds “after” the “big bang”, starting *much earlier* at 10^{-35} seconds “after” the “big bang”, when the **classical** (not **quantum**) spacetime would be about 1 cm across and a causally connected region would have been only 10^{-24} cm across (the horizon problem), in such way that one could **later** “inflate” the spacetime by a factor of 10^{78} and then *safely* keep the Lorentzian metric for at least 13.798 billion years rooted on the Planck scale at which the spacetime “points” are *totally* fuzzy and the principle of **locality** has *lost any* meaning.

Slide 12/19

Slide 12

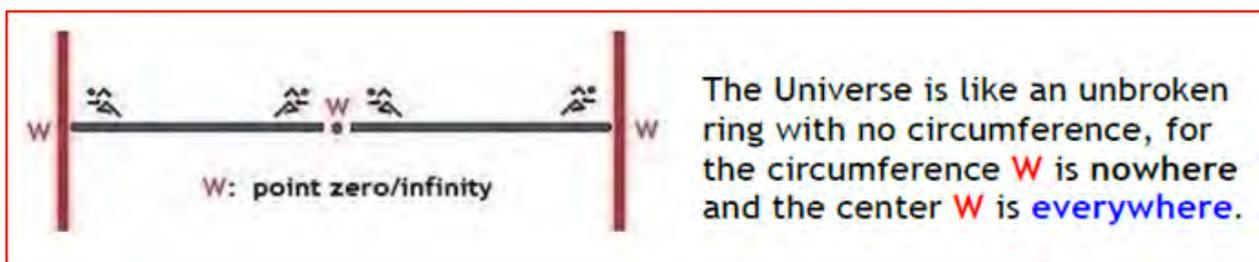
Questions & Answers

Q1. Can you explain the [last chapter](#) in simple terms?

A1. Recall Alice, Bob, and Carol at a table with length 1 meter (p. 15). In [SI units](#), the *meter* is “defined” as the length of the path travelled by light in vacuum during a [time interval](#) of $1/299\,792\,458$ of a second, which makes app. 3.3 nanoseconds of *light-travel time* (E.F. Taylor and J.A. Wheeler). Take these 3.3 ns of *light-travel time* at [macroscopic](#) scale, at the length scale of tables and chairs, and *deflate* them to reach the size of protons: Bob-the-proton will measure the length of his table/proton as 1 RS-meter trespassed *again* for 3.3 ns of his RS-light-travel time in his RS frame in the Small (Fig. 16). Why? Because of the *variable rate* (Sic!) of Time (Fig. 17). Ditto to Carol-as-galaxy: she will measure the length of her table/galaxy as 1 RS-meter trespassed *again* for 3.3 ns of her RS-light-travel time in her RS frame in the Large. In this sense, Bob’s RS-meter and Carol’s RS-meter will *interpenetrate* (Fig. 16), yet Bob will be RS-small and Carol will be RS-large – with respect to Alice (p. 15). It’s all relative, as uncle Albert used to say.

Thus, the 4D world is *perfectly bootstrapped*, [entangled](#) and [pre-correlated](#) (recall [Macavity](#)) at all RS-frames. We can eliminate the absolute *physical* phenomenon of ‘length’ ([Wikipedia](#)) along with the pathetic “[dark energy](#)”.

As mentioned previously (p. 16), there exist two [extreme](#) cases of *exactly* infinite RS-deflation of spacetime toward the Small and *exactly* infinite RS-inflation of spacetime toward the Large, which correspond to (i) one single dimensionless geometric point and (ii) *exactly* infinite world (AAS). The two [extreme](#) cases along [W](#) (Chapter 2) are obtained by *the absolute infinity*:



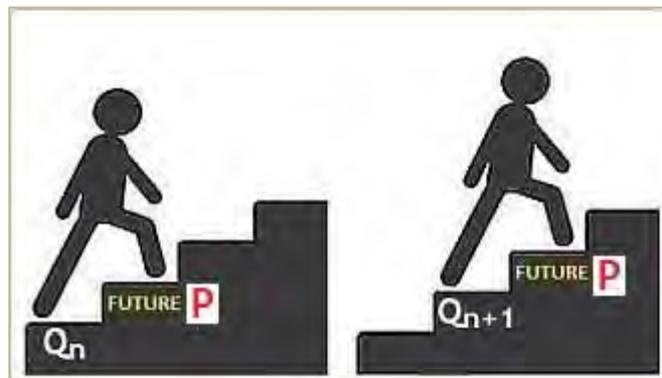
The [ONE](#) (Fig. 15) at point [zero/infinity](#) along [W](#) is both infinitely close *and* infinitely away from the instant ‘here and now’, ever since the [Beginning](#) (Slide 12). It (not “He”) [wraps](#) the spacetime “beyond” [future null infinity](#) and “inside” every geometric point: [split](#) the photon to “see” it (Fig. 7). But you may need a [transcendent tachyon](#) to “see” *absolutely* everything at once (Fig. 1). Not surprisingly, people don’t like the [Platonic World](#) (AAS).

Also, the theory of RS spacetime suggests that we can fly like the **gimbal**: ‘go Carol’ (p. 6 in [text.pdf](#)). Well, not a good idea at this moment (p. 12).

Any questions about spacetime engineering (p. 16)? Just don’t trust your “intuition” (pp. 4-5). Read **Erwin Schrödinger** and the mathematical facts at p. 2 in ‘**the general rule**’ – 31% of quantum ‘**jackets**’ and ‘**gloves**’ (Fig. 12) do not belong to Hilbert space with $\dim(H) > 2$. As an analogy, think of a tripod with differently colored legs (e.g., red, green and blue) which will “*appear differently colored, depending on the particular tripod they are in!*” (**Karl Svozil**). Which means that the ‘legs’ cannot have *any* intrinsic color, so if you ask whether particular ‘leg’ *is* red, or *is* green, or *is* blue, all the answers will be JAIN (yes-and-no). Our **bivalent logic** does *not* work. The quantum ‘**jackets**’ and ‘**gloves**’ (Fig. 12) do *not* have intrinsic color, thanks to which they can (i) accept *any* **context-dependent** ‘color’ and (ii) work exceptionally well in various physical conditions: the **matrix** (p. 18).

Q2. How do you practice spacetime engineering (Fig. 14)?

A2. The arrow of Time is a *cycle* (Slide 1), $Q_n \rightarrow P \rightarrow Q_{n+1}, \dots, ad\ infinitum$. Read the text version of **VL1**, *The Force of Time: Causal Arrow of Time*.



The sequence of 4D events ‘here and now’, $Q_n \rightarrow Q_{n+1}, \dots, ad\ infinitum$, is placed at the *apex* of the **light cone**, whereas the potential future (**P**) runs along the *hyperimaginary axis* **W** *orthogonal* to the light cone (Fig. 8).

Notice that every *consecutive* 4D event ‘here and now’ at the *apex* of the **light cone** has been **nullified** ($W^2 = 0$) in the physical, 4D world. It will be like tossing a photon toward a mirror: the emission-and-absorption “back” to you is actually *one* event (p. 7 in [SE.pdf](#)), like **clapping hands** known as ‘handshaking’ in the **transactional interpretation of QM**. This feature of the **two modes of 4+0 D spacetime** allows for **action-at-a-distance** and **quasi-local interactions**, as well as **modified gravity** à la **Dennis Sciama**. Once you obtain the feedback from the potential future (**carrot**), you’re done. **RDFM**.

Alternatively, you may decide to explore [parapsychology](#), provided that you have some special “[psychic gifts](#)” that would allow you to show off and entertain people, without restrictions from the [Law of Reversed Effort](#). You could, e.g., pass a metal coin [through glass](#) or a needle [through your arm](#).



Spectacular, isn't it? And you will be “famous”. Back to your question (Q2): do you need to know the anatomy and physiology of [gastrointestinal tract](#) to process the food you eat (p. 13)? Learning spacetime engineering is like learning to juggle three balls: read p. 4 in [SEM.pdf](#) and watch a demo by Flavian Glont [here](#). Unlike the ‘Hail Mary pass’ (p. 16), Flavian’s demo is reproducible on demand. But how does it work? Perhaps we can “bypass” the restrictions from 4D spacetime and “see” everything *simultaneously* and from *all directions*, including the inner 3D structure of solid objects and things obscured from 3D viewpoint; for example, all six sides of an opaque box ([Wikipedia](#)) and at *the same* instant everything *inside* the box, from *inside out* as well. I’m not an expert in “gastroenterology” though.

All I can say is that the feedback from the “carrot” (Fig. 14) springs *directly* from my memory, as if I have suddenly “recalled” it (p. 5 in [SEM.pdf](#)). And it works [better than a Swiss watch](#). But again, demonstrating spacetime engineering (VL2) is not a good idea at this moment (p. 12). Hopefully, the situation will improve by the end of this year. My video demonstration from [15 January 2020](#) was completely ignored by [physicists](#), while other people called it ‘a show’. But the Fifth Force (Fig. 18) is *not* about [entertainment](#). Bottom line is the approaching [climate catastrophe](#). Ignore it at [your peril](#).

I am already old and don't need [free energy](#). You do. Time is [running out!](#)

[D. Chakalov](#)

13 May 2023, 16:54 GMT

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*.

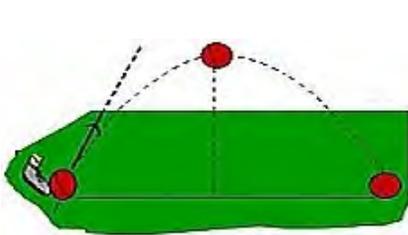


Fig. 1

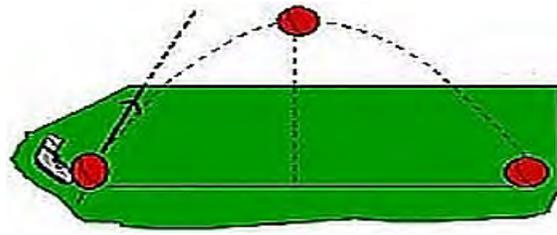


Fig. 2

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](#)).

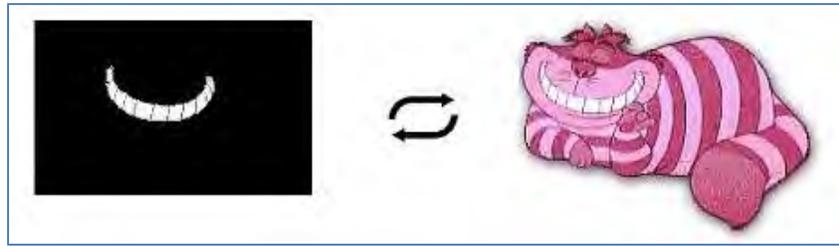


Fig. 3. Symbolic presentation of [Einstein's equations](#)

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, 6×10^{-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](#).

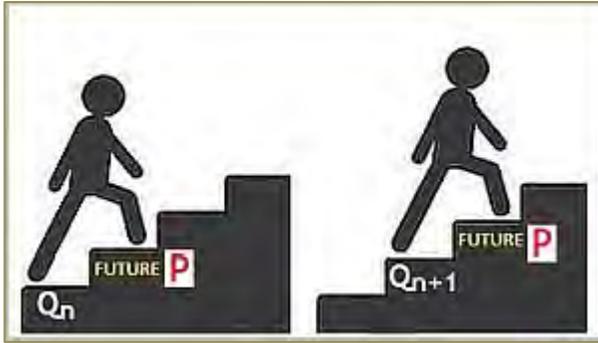
5.4. What is the *structure* of Time due to the Force of Time? *Perfect* continuum of the 4D “surface” of the ‘expanding balloon’ (p. 6 in [book.pdf](#)).

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_i**) 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,

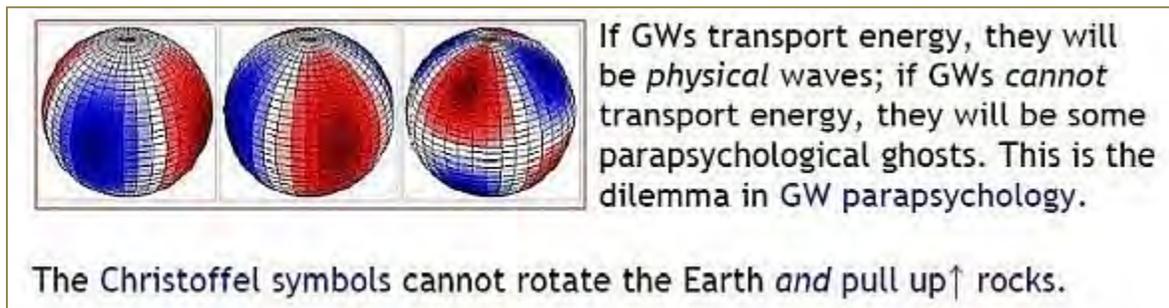
with the *insane* hope to find a shorter route to the Far East, how could he discover America?

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*.

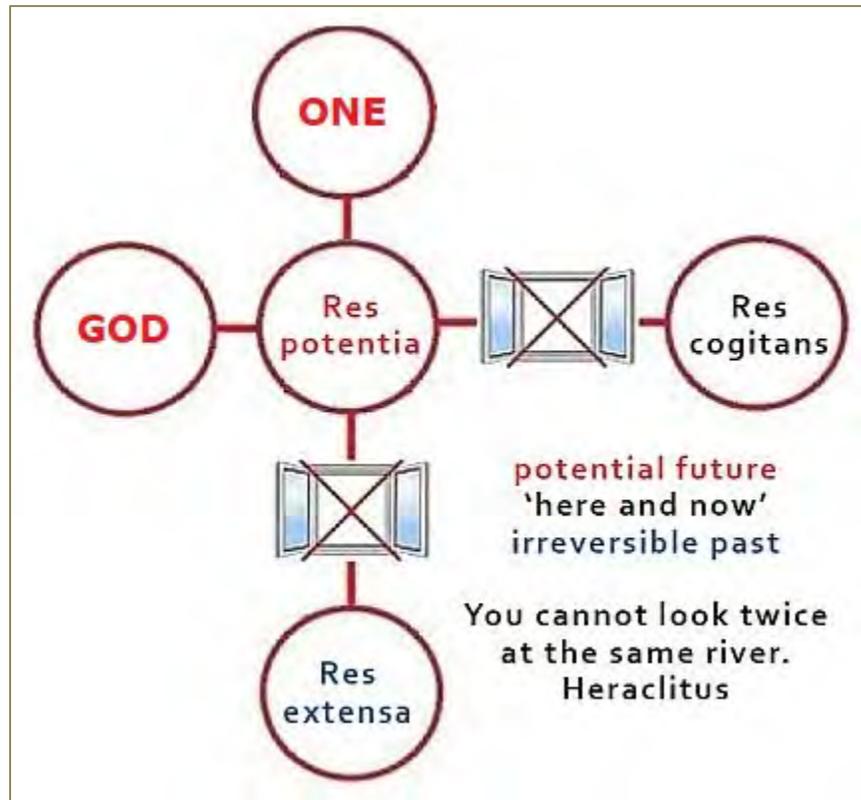


Fig. 15, p. 13 in *Platonic World* ([book.pdf](#))

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).

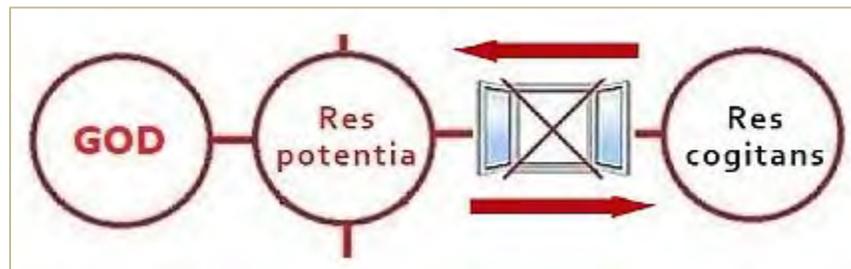
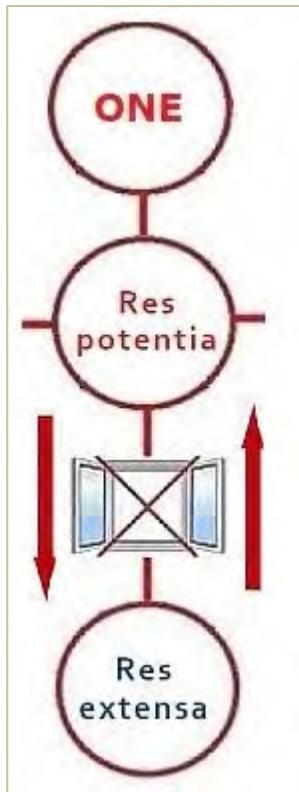


Fig. 1. Read the doctrine of *trialism* at pp. 1-2 in [Force.pdf](#).

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 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. 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](#):



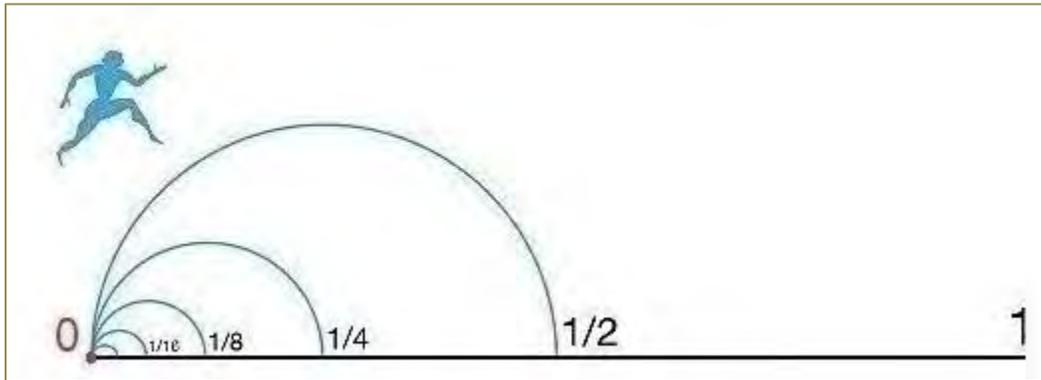
Just modify the **self-acting** $|m|^2$ in the *evolution equation* (VL1) “before” (Sic!) it will **re**-appear with *physicalizable*, that is, with **positive mass**. How? With the **Fifth Force**. It is right **above your neck**, and you successfully used it to rotate the **mental cube**.

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](#):

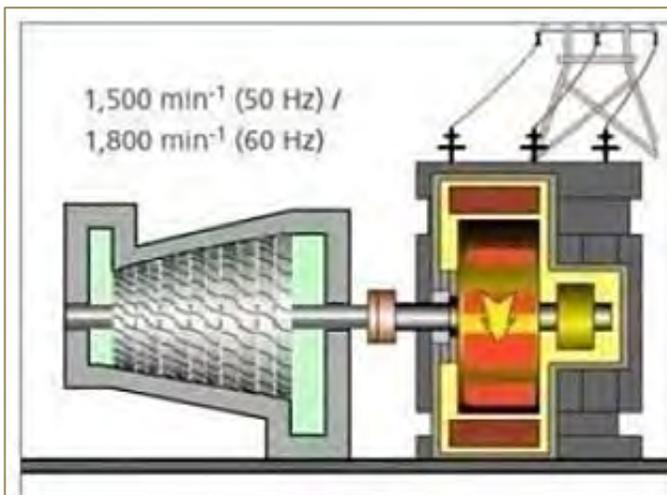


For example, [Bełchatów Power Station](#), Poland.



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?](#)