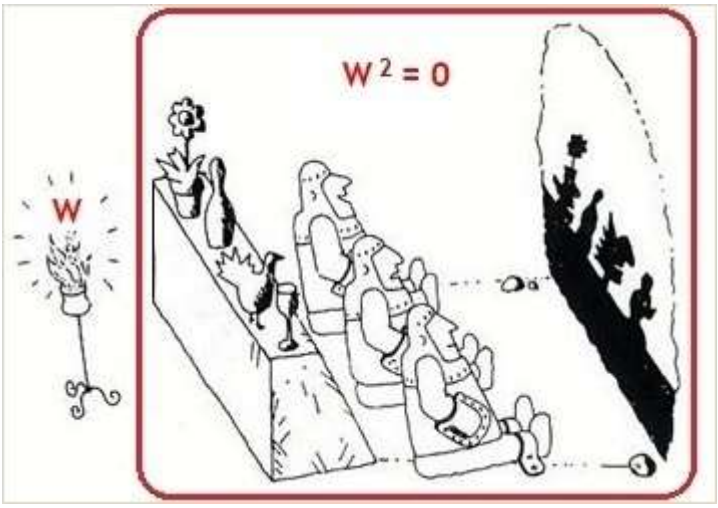
The general rule **1** + **0** = **1**

On p. 2 in *Gravitational Energy* (wegtransformierbar.pdf), I wrote:

> The quantum-gravitational 'John' is *wegtransformierbar* **Platonic** reality: at any consecutive instant from the *observable* metric time **τ** (C. Rovelli), the *intangible* energy of the gravitational field (H. Bondi) is *already* (Sic!) converted into *perfectly* tangible, localizable ***positive*** energy in the *right-hand* side of EFE, and the **Platonic** state of gravity, dubbed 'John', is *completely* **re-nullified** — once-at-a-time **τ**, as read with a clock. This is 'the new normal' ***gravitalized*** state at which "the gravitational field delivers no energy or momentum to the nongravitational matter" ***anymore*** (H. Ohanian). Will do it again, at the *next* instant **τ** viz. at the **next** 'new normal' ***gravitalized*** state.
>
> The general rule is very simple: the **Platonic** world is presented as 'John' in Schrödinger's cat and with '**zero**' in Macavity cat. In symbolic terms, **1** + **0** = **1**: the probabilities for observing John's ***jackets*** sum up ***exactly*** to **1**, whereas the chance to observe 'John' itself is ***exactly*** **zero**, as with the *wegtransformierbar* elephant.

NB: Something *will* happen with certainty (unit probability), but at the expense of eliminating **John** itself, as the latter *always* has ***exactly*** **zero** probability to show up in the *physicalized* 4D world, as explained by Plato with the drawing below. Hence the general rule **1** + **0** = **1.**



Read p. 13 in *The Physics of Life* (Intro.pdf).

To explain the *wegtransformierbar* quantum-gravitational 'John' mentioned above (suggested in April 2000), I will repeat the idea.

Suppose you chase a guy (John) on the street. In a two-dimensional Hilbert space, you believe can *fully* catch/measure John. But he will always leave in your hands only ***one*** of his "jackets", one-at-a-time. You will *never* catch John himself. In a two-dimensional Hilbert space, John offers only two *physicalizable* viz. *colorizable* "jackets", either |heads> or |tails>. Stated differently, John will have two Leibnizian 'windows', which will be called modes of explication in Hilbert space.

But if the dimension of the Hilbert space exceeds 2, you will hit the Gleason's Theorem and the Kochen-Specker Theorem. Now John has *three* modes of explication, and we cannot in principle *fully* measure John's jackets. Namely, the *physicalizable* viz. *colorizable* "jackets" can cover only **69%** (Sic!) from the Kochen-Specker unit sphere below.

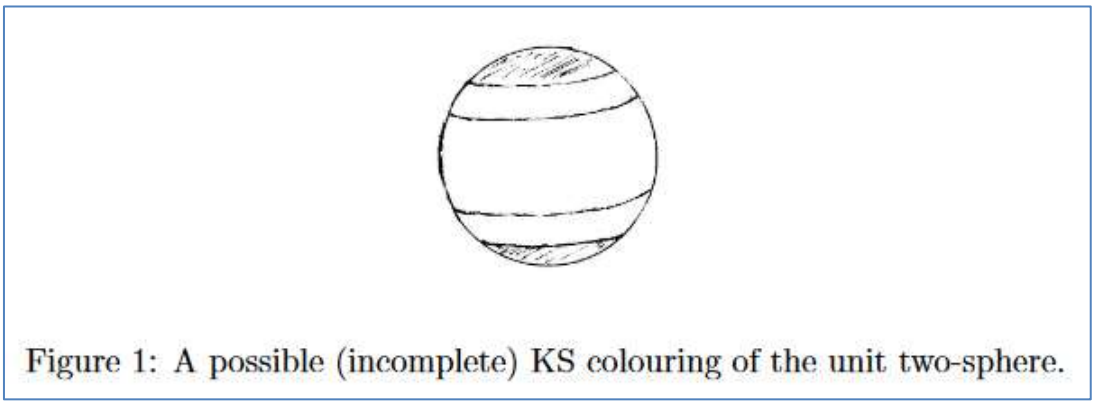


Figure 1: A possible (incomplete) KS colouring of the unit two-sphere.

Read Helena Granström, Some remarks on the theorems of Gleason and Kochen-Specker, arXiv:quant-ph/0612103v2, p. 2.

31% of John's jackets will be **UN**colorizable and **UN**decidable. That is, they *cannot* and will *not* possess "an unequivocal true-false value" in

$$\dim(\mathcal{H}) > 2.$$

They all will be ***excluded*** from the Hilbert space, and the general rule **1** + **0** = **1** (see above) will be applicable to only **69%** of John's ***jackets***.

I will try to illustrate only the idea of Kochen-Specker Theorem. Think of a chair, which has no more and no less than three legs. Call the three legs Tom, Dick, and Harry. Each of them can obtain any of the three colors **red**, **blue**, and **green**, shown in the table below at right, provided that Tom, Dick, and Harry will always have *different* colors.

Tom	Dick	Harry
RED	BLUE	GREEN
RED	GREEN	BLUE
BLUE	RED	GREEN
BLUE	GREEN	RED
GREEN	RED	BLUE
GREEN	BLUE	RED

The table above, showing the *complete* coloring of the tripod, match only **69%** of John's jackets above. The rest are just **impossible**, which means that **31%** of John's jackets will ***not*** correspond to *any* 'tripod'. So, it *cannot* belong to the Hilbert space! But then what does it mean?

Recall Erwin Schrödinger from 1935 (Sec. 8, Part One):

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

It means that the **intact** Platonic *wegtransformierbar* **UN**decidable quantum state, dubbed 'John', cannot be presented in *any* quantum wave function. John does not live anywhere on the light cone either. Only its 4D "jackets" can enter the physical world *via* the apex of the light cone, at the 4D instant 'here and now' from the global *arrow of spacetime*. In the physical world, John has always been **re-nullified**, once at a time **τ** (C. Rovelli) depicted in the drawing from Plato above.

NB: Unlike the Bell Theorem, the famous Kochen-Specker Theorem is not empirically testable. No experiment can prove or disprove the existence of phenomena which are *physically* **un**observable from the outset, such as our John, Eliot's cat Macavity and the *aether* of general relativity. They are **Platonic** reality: see the drawing on p. 1 and read pp. 1-6 in *The Arrow of Spacetime* (Heraclitus.pdf). In my opinion, the gravitational energy is *gravitalized* (Sic!) energy emerging from the **fifth force**. Read *The Bridge: Spacetime Engineering 201* (bridge.pdf).

Finally, I will elaborate on **intact** *wegtransformierbar* **UN**decidable Platonic reality, called John.

In the theory of relativity, we do not face contradictions similar to those from the Kochen-Specker Theorem. If two people with different coordinates, in Paris and in London, look at the Moon, they both will see 'the same' Moon. It will not magically disappear to one of them. Also, the Moon exists as 'objective reality', with definite 'color'. Thus, if the Moon is **green** relative to the observer in Paris and **blue** relative to the one in London, the Moon will **not** possess *any* color whatsoever. It will be the contextual, **UN**colorizable and **UN**decidable 'John', which will only cast its *colorizable* "jackets" (MTW p. 467) of positive mass *via* the *aether* of general relativity, thereby inducing acceleration and rotation. The "jackets" of negative mass cannot live on the light cone.

If we apply the illustration of Kochen-Specker Theorem on p. 3 above to the quantum world, the three distinguishable and unpainted wooden legs (called Tom, Dick, and Harry) will patiently wait to be painted in **red**, **blue**, or **green**, after which they will be again non-contextual 'objective reality', exactly like the state of the Sun when nobody is looking at it (p. 4 in Time.pdf), which is, of course, **untrue**. Point is, the **UN**colorizable and **UN**decidable 'John' cannot live in *any* Hilbert space and cannot be presented in *any* quantum wave function. Sure enough, John cannot "collapse". It is an **intact** Platonic reality "just in the middle between possibility and reality" (Werner Heisenberg).

Recall Erwin Schrödinger from 1935 (Sec. 9, emphasis mine): "(I)f a system changes, whether by itself or because of measurements, there must always be statements missing from the new function that were contained in the earlier one. In the catalog not just *new entries*, but also *deletions*, must be made." Therefore, *any* quantum wave function is an essentially *incomplete* catalog of context-dependent "jackets", whereas their common source 'John' will *always* remain outside your QM textbooks. And if you hear someone saying that "the background Newtonian time appears explicitly in the time-dependent Schrödinger equation" (C. Isham), don't buy it. The quantum world has a special relationship with the physical time **τ** (C. Rovelli): recall Charles Wilson.

Why is this important? People are nowadays investing billions of dollars and euros in "quantum computing", after eliminating 'John' and trying to replace it with *exponentially* growing "quantum error corrections". Pathetic. The hardest thing of all is to find a black cat in a dark room, especially if there is no cat (Confucius).

You need industrial spacetime engineering: read closely p. 19 in *Notes on Spacetime Engineering* (SE.pdf). Not interested? Fine, no problem. I can take it. Does a fish need a bicycle?

If you wish to learn more about quantum gravity, first you will have to qualify: follow the instructions (1)-(2)-(3) at p. 5 in explanation.pdf. Good luck.

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