

Collection of arguments vs. Niels Bohr's destruction of reality

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Abstract

Because of found mistakes, which we are lazy to correct, we need to check and recheck the foundations of Physics. As examples of mistakes: "all" scientists used solution of dust collapse almost century, but it was wrong [Journal of Cosmology, 6, 1473-84, 2010] and my own paper: the unreal *coordinate singularity* of black hole surface is actually real [J. Contradicting Results Sci. 1, 9-13, 2012]. Outstanding person and a successful scientist Rudolf Peierls also noticed errors [Surprises in Theoretical Physics, Princeton University Press, 1979]; I have not got the unappreciated his work, so I can not agree with him. Honest work on the errors, as I understand, has not begun. You postpone everything until the Second Coming? But God speaks: Matthew 25:26. ©

PACS numbers:

Note, my mentioned in abstract paper is downloadable from here: [1]. The site of journal is "dead".

I. AUTHORITY OF EINSTEIN AND WHY WE MUST RESPECT AUTHORITY

The quote from 2014-Wikipedia on Einstein:

He developed the general theory of relativity, one of the two pillars of modern physics (alongside quantum mechanics).[2][3] He is best known for his mass-energy equivalence formula $E = mc^2$ (which has been dubbed "the world's most famous equation").[4] He received the 1921 Nobel Prize in Physics "for his services to theoretical physics, and especially for his discovery of the law of the photoelectric effect".[5] The latter was pivotal in establishing quantum theory... Later, with the British philosopher Bertrand Russell, Einstein signed the Russell-Einstein Manifesto, which highlighted the danger of nuclear weapons... Einstein published more than 300 scientific papers along with over 150 non-scientific works.[6][8] His great intellectual achievements and originality have made the word "Einstein" synonymous with genius.[9]

The quote from viXra:1402.0019, see [2]:

It is pity, that they call any authority argument as "fallacy". Why to become a president, if anyone would insult you on the streets and not willingly obey? Atheist: "obeying to authority... brought us two world wars." Me: just because Stalin and Hitler killed the respect for human achievements (e.g. I am published in Physical Review, thus have more authority as You all here), it does not mean, that authority and respect are bad. They were just killed by criminals. That is sin of criminals, not of an obeying authority. The Love to God was killed by satan in you. It is sin of satan, not of Love. So, dear atheistic brothers: repent to be good. The Charlotte, if she is alive, shall read the Plato's investigations before saying "Plato wrong, I am right". For destruction of sanity of such great mind, Charlotte must bring us the exact quotes and show the exact point in text, there Plato "made" mistake in (mathematical?) arguments. The Plato has derived the knowledge: "we all know the God do am", hasn't he? My source tells, that has. Do You know this part of Plato's work? Can You give me more precise reference, the book title? After that, please tell me, is this part the logically complete? Has the Plato the axioms or not, thereby? Atheist: Plato is polytheist, thus is wrong. Me: Plato is not crazy, he is acknowledged wise man. God Father, God Son,

God Holy Spirit: the God Holy Trinity.

II. CLEAR SIGNS OF BELL'S MISLEADING MISTAKE.

A. The Einstein's Relativity

Let particle A be quantum entangled with particle B. The system has wave function $f = f(A, B)$. So then you measure the particle A in point PA, the f becomes collapsed, so the probability to find particle B in state S becomes 100%. The point, where this happened with B is PB. Take the Inertial Coordinate System W1, the events PA and PB in spacetime happen simultaneously in W1. But take another moving Coordinate System W2, then the events PA and PB are not simultaneous: the part of wave-function f is collapsed (particle A was measured), but measurement outcome of particle B is not fixed (because that part of wave-function is still not collapsed). So you get no entanglement between A and B, but which is there, so it is contradiction. Therefore: the function f is always collapsed within all spacetime, if somewhere sometime a measurement of A (or B) is done. Another words: event of measurement collapses this entangled function within all spacetime (past and future). Thus, particles A and B are classical. Perhaps Einstein smiles in afterlife! Let him become thrilled, see below.

B. Are there really inequalities in Bell's research?

In the book "Quantum Enigma" (ask for file, if needed) the Rosenblum tried to derive Bell's inequality following way. Out of some region are flying the entangled pairs of particles (A,B). The Alice catches particle A and measures it's polarization with polarizator (getting as outcome only "yes" or "no": is the spin closer to first axis FA of polarizator or not). Same does the Bob with particle B. If the axis FA of polarizators are aligned, then there is no difference in protocols of results (when Bob and Alice will compare the records). But if Alice turns her axis by angle Θ , then the difference in protocols becomes, say, 5%. After that Alice's act the Bob also turns his axis (in opposite direction) same amount. But in relation to Alice the angle of difference β (same angle is in Section IV) between people changes from Θ to 2Θ . So because Bob turns the axis in relation to SHIFTED direction (by Θ) of Alice's axis, so the more distant position of Alice axis, the difference in results may increase more

than 5%. The 5% Bob would get, if the angle of difference β changes from 0 to Θ , but now the angle of difference β changes from Θ to 2Θ . So it is not certainly the 5% in addition. That was missed by Rosenblum.

III. CRITICAL VIEW AT BELL'S PAPER [3]

See formula (3): $\langle \vec{\sigma}_1 * \vec{a} \vec{\sigma}_2 * \vec{b} \rangle = -\vec{a} * \vec{b}$, must there be $\langle \text{SIGN}(\vec{\sigma}_1 * \vec{a}) \text{SIGN}(\vec{\sigma}_2 * \vec{b}) \rangle$ instead? The SIGN operator acts following way: $\text{SIGN}(-2.67) = -1$, $\text{SIGN}(4.8) = 1$, $\text{SIGN}(0.7) = 1$.

It is very, very suspicious. Why the Bell has not given the derivation of such important result, the formula (3)? Is it "result", or hypothesis? The Tartu University specialist was unable to give me answer: where is the derivation of formula (3)? How it was derived? Was it derived?

A. From letters to Dr. Groote, language: Estonian

Valemid (1) ja (2) tähendavad, et arvutakse keskmine katse tulemustest. Kuid valemis (3) keskendamise operaatori $\langle \rangle$ sees pole katse tulemused. Sest katse tulemused on diskreetsed väärtused $\text{SIGN}(\vec{\sigma}_1 * \vec{a}) = \pm 1$ ja $\text{SIGN}(\vec{\sigma}_2 * \vec{b}) = \pm 1$ (see on hästi näha lk.403). Kuid pidevad funktsioonid $\vec{\sigma}_1 * \vec{a}$ ja $\vec{\sigma}_2 * \vec{b}$, mis on praegu artiklis, valemis (3), pole katse tulemused.

Aitäh kiire vastuse eest, Dr. Groote. Sina kirjutasid: "kui $\vec{\sigma}_1 * \vec{a} = +1$, siis $\vec{\sigma}_2 * \vec{a} = -1$ " Kuid see ei ole nii kirjutatud, kui Bell kirjutab. Vaata, lk.403: "measurement of $\vec{\sigma}_2 * \vec{a}...$ the value -1". Minu arusaamas sõnale "measurement" vastab SIGN operaator. Seega ei kehti sinu $\vec{\sigma}_2 * \vec{a} = -1$, vaid minu $\text{SIGN}(\vec{\sigma}_2 * \vec{a}) = -1$. Igatahes, asjaolu, et MEASUREMENT of $\vec{\sigma}_2 * \vec{a}$ võttab ainult kaks väärtust (+1 või -1) peab olema valemi (3) tuletuse sees. Kuid see üldse ei paista välja, ka mina (kui tuletasin see valem) pole kasutanud SIGN operaatori. Tuletus on lihtne ja varsti loodan Sulle saata, nimelt Belli artiklis [3] valem (3) mina tuletasin. Kuid puht mehaaniliselt, mitte kvant-mehaaniliselt. Järelikult, Einstein oleks rõõmus.

IV. DERIVATION OF FORMULA (3) IN EINSTEIN'S STYLE.

Let us derive (3) without quantum-mechanics. Alice and Bob. Particle arrives at Alice with spin σ_1 , the detector of Alice has axis \vec{a} . Let both vectors be entirely in the plane of detector (perpendicular to particle's flight). The angle between these vectors is ϕ (in cylindrical coordinate system with flight direction as axis). The angle between \vec{a} and \vec{b} is β , thus, the angle between $\vec{\sigma}_1$ and \vec{b} is $\phi - \beta$. In Einstein's style holds $\vec{\sigma}_2 = -\vec{\sigma}_1$. So, the angle between $\vec{\sigma}_2$ and \vec{b} is $\phi + \pi - \beta$. Let $a, b, \sigma = |\vec{\sigma}_1| = |\vec{\sigma}_2|$ be norms of according vectors. Then

$$\langle \vec{\sigma}_1 * \vec{a} \vec{\sigma}_2 * \vec{b} \rangle = \frac{1}{2\pi} \int_0^{2\pi} \sigma^2 a b \cos(\phi) \cos(\phi + \pi - \beta) d\phi = -\frac{\sigma^2}{2} a b \cos(\beta) = -\frac{\sigma^2}{2} \vec{a} * \vec{b}.$$

Thus, $\sigma^2 = 2$. So, the Bell has meant photon $s = 1$ with $\sigma^2 = s(s + 1)$, hasn't he? But, in case of typing mistake (in (3)) may even be $\sigma = 1$. The typing mistakes are not rare even in most top journals and prominentest authors, as prime example: Black Hole "Hawking temperature" in two abstracts of [4] is different. But must be the same, because it is his most famous discovery. Has the World gone with true one?

So how really the Bell has got formula (3)? The Bell refers to Bohm's 1957 paper. However Bohm treats not spin 1/2 particles, but photons and also has not provided the formula (3), i.e. has not calculated the correlation function. But the Bohm has formula (2) (not Bell's formula (2)). There are two spin 1/2 particles with opposite spin-vectors (in spherical coordinates) and with uniform probability distribution. Thus, the Bell's getting of formula (3) is better to coincide with my derivation. But what does it mean? The Bell has not used the quantum mechanics while getting the formula (3), because I have not used it. We must forgive the "human factor" inside Bell's "groundbreaking" paper, the former candidate for Nobel Prize and let God has mercy on Bell's soul. The great Einstein also has shown the "human factor", saying without objective proof on Bohm: he did well, but not that, what I have asked.

V. MORE CRITICS ON BELL'S PAPER

Meie kalli Bell surm oli müstiline: kui ta poleks surnud, siis samal aastal oleks saanud Nobeli preemia oma artikli eest. Sel juhul meil poleks olnud lootust teda kritiseerida.

Vaadake valem (10), seal sees pole ajast t sõltuvust. Kuid härra Bell kirjutab samal lehel: "the function (10) is not stationary". Kuidas nii??? Ta proovib selle aja sõltuvuse tõestada

ja kirjutab: "thus $P(\vec{b}, \vec{c})$ cannot be stationary." Kritiseerin: 1) selle $P(\vec{b}, \vec{c})$ pole valemis (10), seal on $P(\vec{a}, \vec{b})$, 2) jälle pole selge kus kohta tuleb sõltuvus ajast t , sest kõik vektorid \vec{a} , \vec{b} ja \vec{c} on konstantsed (eks ju?).

VI. THE BELL'S CASE TELLS: FOUNDATION OF QUANTUM MECHANICS IS NOT CORRECT

The Bell has destroyed the Bohm, but I have destroyed Bell. Thus, I am left with David Bohm. I am convinced, that the quantum potential of Bohm can be detached from the wave function of Bohr and describe the actions of God's Grace. The whole spacetime, the present and past, are fine tuned by Holy Trinity.

Look in wikipedia "Robertson-Schrödinger uncertainty relations" in article "Uncertainty principle", or read e.g. [5]. In wikipedia is written the variance

$$\sigma_A^2 = \langle (A - a)\psi | (A - a)\psi \rangle,$$

where $a = \langle \psi | A | \psi \rangle = \langle A \rangle$ is average over operator A . Thus, it is scalar product of two vectors $\langle f_1 | f_2 \rangle$, where

$$f_1 = (A - a)\psi, \quad f_2 = (A - a)\psi.$$

It is not the same as average

$$\langle (A - a)^2 \rangle = \langle \psi | (A - a)^2 | \psi \rangle$$

and the assumption, that operator A is Hermitian ($A = A^{T*}$) does not help us. Indeed, the vector $\gamma = A\psi$, if being complex conjugated, does not change itself from being vector to operator:

$$\gamma^* = (A\psi)^{T*} = \psi^* A^{T*},$$

because the operator A^{T*} acts here not to the right (as the rule was saying), but to the left, on vector ψ^* . As example $A = d/dx$, $\psi = x$. Then $\gamma = (d/dx)x = 1$, then $\gamma^* = (1)^* = 1$. Also get in mind, that

$$\psi^* A^{T*} = x (d/dx) = 1,$$

because operator (d/dx) must here act to the left, on the x . Thus, the rule "operator acts to the right", is not always holding in the "Martila's brain physics".

Hereby more of my considerations:

Take $\langle \psi | A B - B A | \psi \rangle$, if $A|\psi\rangle = a|\psi\rangle$ and $B|\psi\rangle = b|\psi\rangle$, then always $A B = B A$. If in text is written: $\langle \psi | A | \psi \rangle \langle \psi | B | \psi \rangle$, then this is not equal to $a b$, because the ψ with B is not the ψ with A .

As I understood from W. Heisenberg original paper <http://scarc.library.oregonstate.edu/coll/pauling/bond/papers/corr155.1.html>, the author has written in the beginning, that uncertainty formula comes from the disturbing of the system by the measuring devices.

See News paper "Exploiting Subtleties in the Uncertainty Principle" <http://www.rochester.edu/news/show.php?id=5692> on Jeff Z. Salvail's article *Nature Photonics* 7, 316-321 (2013).

A. Critical Remarks on Heisenberg's microscope

In the D. Bohm and B.J.Hiley book [10] page 14 is the microscope. But I see, that 1) assumed, that particle-wave duality is true, 2) is missed the point, that the photon in Compton Effect shall be with changed the energy $h\nu = f(\theta)$, which can be measured at point Q, 3) if the uncertainty principle is not assumed from the beginning, then at point Q we can measure all properties of photon very exactly. Thus, we can measure the arriving angle and the θ , 4) the lense can be the one from telescope, thus with corrected optical defects (the photons of all energies arrive at same point Q).

B. On Schrödingers cat

According to Bohm's book, the cat is not in dead-alive duality. Otherwise there be no real cat before measuring. The two states duality is in electron's state. But, this dual electron state is connected (through the gun) to the cat. Thus, being outside the cat's box we can not believe (within Quantum Mechanics), that cat is alive or dead. The act of looking? What does it collapses? We do not look at electron, we look at the cat. Thus, we firstly collapse the cat's state. Then collapses the electron's state. But Bohm tells, that cat is not in limbo "dead-alive". Thus there is contradiction. The Schrödinger has regarded it as absurd. In fact, the dead-alive duality says, that there is no real cat. Thus, the Bohr's theory denies

the reality, before it has been measured. But what to measure, if there is nothing? Let us believe, that we in fact do measure, in fact we collapse the wave functions. Thus, this island of reality must be enlarge to all spacetime. Thus, the cat is actually dead or alive. My supervisor, Prof. Risto Tammelo said: there is no cat. The Holy Spirit has spoken! Go out of quantum uncertainty to real Light, dear professor.

And the observation in present collapses electron's state in the past. Thus, it was always collapsed. No place for nothingness (see enemy "nothing" in the film "NeverEnding Story"). The cat can be replaced with a plant (herb), or even with some mechanical device. To be dramatic enough, let it be traffic light.

VII. FINALLY, THE BELL'S DERIVATION OF (3)????????????

Let us start with $\langle \vec{\sigma}_1 * \vec{a} \vec{\sigma}_2 * \vec{b} \rangle$, where $\vec{\sigma}_1 = -\vec{\sigma}_2 = \vec{\sigma}$. The $\vec{\sigma}$ is vector, which components are Pauli matrices. Therefore, using law [6] for Pauli matrices

$$(\vec{\sigma} * \vec{a})(\vec{\sigma} * \vec{b}) = (\vec{a} * \vec{b}) \text{diag}(1, 1) + i \vec{\sigma} * (\vec{a} \times \vec{b})$$

we get

$$P := \vec{\sigma}_1 * \vec{a} \vec{\sigma}_2 * \vec{b} = -|a| |b| \text{diag}(\cos \gamma + i \sin \gamma, \cos \gamma - i \sin \gamma).$$

Then Bell (I am doing that, but I do not know has the Bell went the same way or has not) uses the state-vector of Alice's particle

$$\vec{\psi} = (\psi_1, \psi_2),$$

with normalization $\langle \vec{\psi} * \vec{\psi} \rangle = 1$, so holds $\langle \psi_1 \psi_1 \rangle + \langle \psi_2 \psi_2 \rangle = 1$. Because the problem assumed to be symmetric, may hold $\langle \psi_1 \psi_1 \rangle = \langle \psi_2 \psi_2 \rangle = 1/2$. Then Bell, I assume, finds the average

$$\begin{aligned} \langle \psi | P | \psi \rangle &= -|a| |b| \langle (\psi_1, \psi_2) * ((\cos \gamma + i \sin \gamma) \psi_1, (\cos \gamma - i \sin \gamma) \psi_2) \rangle = \\ &= -|a| |b| \cos \gamma = -\vec{a} * \vec{b}. \end{aligned}$$

A. Let us criticize that derivation: we love the Einstein's "God does not play dice"

1) Why during average process the operator P acts only on Alice's state function? The Bob's particle has own state-function $\vec{\beta}$ and the operator $A := \vec{\sigma}_1 * \vec{a}$ acts on $\vec{\psi}$, operator $B := \vec{\sigma}_2 * \vec{b}$ acts on $\vec{\beta}$. Then why in this derivation the operator $P := AB$ acts solely on $\vec{\psi}$?

2) What are the experimental results $\{\kappa_i\}$ of physical quantity P ? Let us find the eigenvalues. The system $P\vec{\rho} = \kappa\vec{\rho}$ has the only solution: $\kappa = -\vec{a} * \vec{b}$ (it is real part of two complex solutions). But the Alice with Bob see only +1 or -1 in each try. So, the operator P is detached from reality. And it has no randomness (each time the actual result is the same), which is very suspicious for Bohr's quantum mechanics. Thus, there is defect in definition of operator P . Indeed, different parts of this operator shall act on different particles. Thus, You hardly can bring it all together.

3) What are the basis vectors (s.c. "basis" $\{\vec{e}_1, \vec{e}_2\}$) for the vector (ψ_1, ψ_2) ? Have these components ψ_1, ψ_2 some meaning? Why we shall assume symmetry $\langle\psi_1\psi_1\rangle = \langle\psi_2\psi_2\rangle$? The Bell is gone and there is no answer in Bell's "groundbreaking" paper. Moreover, in the above derivation is used only Alice's basis, however there are two different basises (Bob also has one): thus are different components of state-vectors and spin-vectors according to the basises.

4) If the particles are entangled, how relates the $\vec{\beta}$ to $\vec{\psi}$? They may look equal in their mathematical form $\vec{\beta} = \vec{\psi}$, but they are essentially different $\vec{\beta} \neq \vec{\psi}$, because they describe different particles ("particle waves").

VIII. DISCUSSIONS

Dr.Groote:

Ma ei ole üldse kindel Sinu tuletamise suhtes. Tundub, nagu Sa viid miinusmärki kunstlikult sisse. Minu arusaam on, et kuna alguses on singleti seisund, siis sellel punktil on spinid vastupidises suunas. See kehtib ka edaspidigi. Kui mõõdame samas (vastavalt parallelses) teljes, siis on tulemus just -1, kui aga võtame kaks vektorid a ja b, mis ei ole parallelsed, siis on tulemus -1 ja +1 vahel (+1 siis, kui a ja b on antiparallelsed). Bohmi kvantmehaanika on muidu üks võimalus tõlgendamiseks (teine on teatud Kopenhageni tõlgendus). Aga Bohmi kvantmehaanikal on probleeme just siis, kui launefunktsioon "kokku varjub" - seda püütakse seal igatmoodi kirjeldada, aga mingi mudel seal pole väga mõistlik. Niipalju minu vastused puhkusest. Tervitades, Stefan.

Mina:

Tere, Stefan. Puhata saame "põlevat jõgi teisel kaldal".

1) Katses iga inimene mõõdab kas $+h$, või $-h$. Selleks meil ongi kvant-mehaanika:

mõõdetud suurused on mitte pidevad, vaid diskreetsed. See ei sõltu sellest, kuidas mõõteriist on orienteeritud. P.S. Parandasin üks koht failis ("Belli tõestuse" kriitika osas), vt. <http://professionali.ru/~1419166/docs>.

2) Sina kirjutad, et Bohmil on raskus lainefunktsioniga. Kuid tegelikult Bohmil on mitte laine-funktsioon, vaid "quantum potential". Seega, kuidas siis võiksid olla raskused? Raskused Bohmi teoriga on sellel, kes pole nõus, et kogu aegruum on "fine tuned". Mitte ainult algul olid head algtingimused (finely tuned), vaid on kogu ajalugu on "fine tuned".

3) Stefan: "alguses on singleti seisund, siis sellel punktil on spinid vastupidises suunas." Mina: Sina räägid Einsteini keeles – kindlate osakeste keeles. Kuid BOHRI teorias, algul spinide suunad pole määratud. On vaid määramata lainefunktsioonid. Nagu Sina võiksid näha, on suured probleemid veel lahendamata: piisab veidi kriitikat ja kogu Bohri teooria variseb kokku (minu peas).

Sadeem: "The wave function is complex, Why?". Me: Well, try to make theory with real one. You will arrive at Newton's Laws. Latter are true, but the Bohr's Quantum Mechanics with complex psi are not true.

He: The EPR paradox was of great importance for the development of quantum theory. Me: it's strange, paradox in the theory is usually harmful to this theory.

Thank You very much, Remi. Quote arXiv:0808.3316: "the speed of this spooky influence would have to exceed that of light by at least 4 orders of magnitude." Me: suppose the experimentalists arrived not at $v > 10^4 c$, but there is a typing mistake and they meant $v < 10^4 c$ for spooky action. Such a disaster for David Bohm! It turns out, that his "interpretation of QM" is in fact very well refutable. Thus, it is not something stupid the Bohm did. Bye!

IX. ON THE [11]

Quote [11]: "many physicists seem to feel obliged to hide from public that the spherical solution of Schrödingers wave equation does not agree with any experiment... Schrödinger equation is able only to arrive at hydrogen energy levels, and it has to be modified and simplified for other atoms... Quantum mechanics solutions, in their modern form, contradict reality because on the basis of these solutions, the existence of crystal substances-spaces is not possible [6,page 26]... [6] Kreidik, Leonid G. and Shpenkov, George P. 2002. Impor-

tant Results of Analyzing Foundations of Quantum Mechanics, Galilean Electrodynamics and QED-EAST, Vol. 13, Special Issues No. 2, 23-30; <http://shpenkov.janmax.com/QM-Analysis.pdf>'

How does the Heisenberg's uncertainty of energy and time's moment ($dE dt \ll 0$) allow definite energy levels of electron in Bohr's atom? Yes, it surely allows: at given moment electron in atom has no energy level, thus the atom is A) not ionized and is C) not neutral. Holds the "not ionized"="neutral". Thus, we have logical contradiction. To Remi Cornwall's comment "In Feynman, can't remember which volume (probably 1), he does one of those nifty little calculations to give a guestimate about the size of atoms. He plays off radius against the uncertainty in momentum, kinetic energy and electrostatic potential to arrive at the Bohr radius": yes, the Creator takes regard on the uncertainty principle. But the philosophy of this principle is wrong, because if in a point of time particle has no definite energy, then the particle in fact has no energy. Particle without energy is nothingness. My view: the uncertainty in Heisenberg's historical paper is shown as our impotence to objectively measure the real, CERTAIN micro-world.

Shalender Singh: "Actually given a volume containing probability cloud of the position of electron in hydrogen atom in the ground state, the uncertainty of energy does apply to that volume. It means to say that given smaller and smaller time interval, there is bigger and bigger amplitude of energy perturbation in that volume. This perturbation of energy may or may not be stably transferred to the electron depending upon whether it can lead to a time evolution of electron to the next stable energy state". Me: but what if you consider a point in time? The instant "picture" of atom? Shalender Singh: "For QM that picture does not exist because instantaneous time implies a singularity. If the time interval is smaller and smaller the electron has lesser time to "time evolve" into a different state. The energy perturbation is not a single number but is a probabilistic variable and if you solve the QFT equations (which actually use $dE dt$ for virtual particles) then you can directly deduce the probability of spontaneous jump to a higher energy state. It is very small but not zero."

To Shalender: so the QM demands the Planck time boundary, to avoid the (probabilistic) singularity. However, there is "Integral challenges physics beyond Einstein" in Google. You: "... the probability of spontaneous jump to a higher energy state. It is very small but not zero." Me: thank You! It is like the quantum tunneling. But there is higher potential in excited level, even in ionized state. Therefore, to stay there for long is impossible. However

the atom remains for long the ionized. Therefore, the perturbation modes must be bound from above.

Thank You, Remi, you have just described the Heisenberg's result. The C.Darwin has discovered the adaptation of animal organisms to the varying conditions in nature. However Darwin made deadly (for Normal Theology) hypothesis: the seen adaptation is evolution on micro-scale. The Heisenberg also have made the hypothesis, which is deadly for Normal Reality: if we can not objectively measure a thing, then there is no thing, nothing. It is the solipsism: surely exists only my perception as the observer.

Solipsist-Tolerant man: "you insert a multi-valued logic into two-valued, please, no!" Me: Logic is only two-valued ("yes", "no"). Multi-valued way of thinking (Russian: "yes-no-perhaps") is not logic. "All you need to say is simply "Yes" or "No"; anything beyond this comes from the evil one." (Matthew 5:37 NIV). To an example: "he is a tall man". To make my logical decision (Yes/No), I ask You: what meaning has the word "tall"? Is it high in centimeters, or proud like a fool? Then I will ask You to show me him. Then I can judge verity of your statement: is it Yes, or No. 2) I am sure the probability theory, Bohm's Quantum Mechanics and statistics can live happily within the natural logic. Charles Francis directed us to the example "there will be a sea battle tomorrow" (Wikipedia: "Problem of future contingents"). Me: Yes, it is possible to be: Putin vs. Obama because of Ukraine question. See, just like the Jesus Christ has recommended, I have responded with "Yes". If You ask: "will there be a sea battle tomorrow?", I will ask back: "are there any reasons?". You: Obama and Putin are arguing. Me: Yes, the battle is possible. And again, I say "Yes", just like the Jesus instructed me. You: will battle happen for sure, with 100%? Me: Because I believe in Good Will of our Free World presidents, I answer with definite "No".

The known uncertainty $\delta x \delta p \neq 0$ can have mathematical value, if one avoids the popular thinking, that particle has not the impulse and not the position within $p \pm \delta p$, $x \pm \delta x$. That thinking do means, that particle has no position and no impulse within all $|p| < \infty$ and $|x| < \infty$. It is criminal solipsism: let the other rot, he is not the real. Therefore, the particle has in fact certain x and p , which exact detection is limited by Heisenberg's uncertainty. If we detect infinitely precise the position, we influence the impulse of particle in uncontrolled way. But what about energy-time uncertainty? For a point in time, the particle can have any energy after the detection experiment: if to detect infinitely fast.

Dear Shalender, it is very interesting, that even in ground state the hydrogen atom

can radiate the photons (low probability spontaneous transmission to excited state, then the decay of latter with releasing of photon - that is low probability violation of energy conservation LAW). Can You back it up with nice publication? Bye!

There is three-dimensional derivation of the uncertainty principle: [12]. There holds $\delta x \delta p_y = 0$. Thus the particle has definite position x and certain impulse p_y . But there also holds $\delta y \delta p_x = 0$. Thus, the particle has also definite position y and certain impulse p_x . Therefore the particle has certains p_x and x . But that contradicts the uncertainty $\delta x \delta p_x \neq 0$. The way out the paradox: the uncertainty formulas do not apply to physical system, which is not yet measured.

X. NO DISCONTINUITY OF SPACE-TIME

Have You read the original Heisenberg paper? In the beginning is clear said: the uncertainty originates from discontinuity of space-time. Because there are experiments proving, that spacetime is continuous, then the David Bohm's theory is right, and Bohr's philosophy is wrong.

Position x and time t (and x with y) do commute in original Quantum Mechanics, so one can exactly get position and time. Cosmic observation shows continuity of spacetime many times below the Planck's scale: "Integral challenges physics beyond Einstein". How about Planck time and length to support Heisenberg?? Continuous spacetime! So, there is no physical foundation below the Heisenberg's uncertainty principle. In his famous paper Heisenberg backs up his hypothesis by hypothetical Planck's time and length.

XI. MANY BODY SYSTEM

Many body system consists of particles A, B, C, D,... If let the system evolve, then Bohr's theory tells, that in given point can be found all of these particles (they tell "a particle is simultaneously everywhere"). Because particles can not be simultaneously in one place, then the many body system has not a solution in Bohr's philosophy. What is done? The wave function of proton is kept collapsed: proton is in certain place with certain impulse: zero. And the electron's wave function is free. But because of uncertainty principle, you can not have the proton at your disposal. Therefore, please, abandon the

Bohr's philosophy-solipsism, and direct your attention to the David Bohm's theory. Sadeem Fadhil: "I conclude from the majority of opinions, which refer to DFT <density functional theory <http://shpenkov.janmax.com>> and others that ignoring the the electron-electron interaction and the correlation are the main error sources. But DFT itself has also their problems like intermolecular interactions specially van der Waals forces (dispersion), charge transfer excitations and transition statesetc". Me: Dear Sadeem, to include the electron-electron interaction, one needs to know: 1) where the electrons are. But due to uncertainty principle the electrons are "everywhere and nowhere."

Like the Shrödinger cat, a nano-robot can't operate, if its parts are in superposition. Surely, the thing does not have a mystic power to collapse the wave-functions of own parts A, B, C, D,...

F. Leyvraz (PhD, University Professor, very high RG reputation): "If a system has, say, 3 particles, then the system's having particle 1 at q_1 , particle 2 at q_2 and particle 3 at q_3 has a given *complex* amplitude $a(q_1, q_2, q_3)$... Quantum mechanics is neither about waves nor particles: it is about quantum systems and their states." Me: 1) a man from the street, would see, that these two sentences are incompatible. 2) even if initially the particles are in clear separation, the further evolution makes such illogical situation: in given spacetime point can be all three particles: there is non zero probability for such event. Is this correct? 3) the Bohr's philosophy has difficulties, see my contributions in "homepage".

F. Leyvraz: "why? one of those sentences says that the assignment of complex amplitudes to system configurations is a state. The second sentence says that QM is about states." Me: my view of logic is following. System configuration is a state, which mathematics contains the complex amplitudes. I argue, that the state is system configuration (of particles). Because QM is about states, then QM is about particles. P.S. The David Bohm theory uses particles.

PhD Charles Francis: "we know of the system configuration, not the system configuration itself." Me: Thank you for the true honor of having persons with such high RG reputation. Dr. Leyvraz refers to function of state $a(q_1, q_2, q_3)$, where q_1 are space coordinates of first particle, q_2 - second, and q_3 are the coordinates of the third one. Thus the QM really is about the particles at definite, precise positions. I mean, that the very definition of state-function includes the word "particle".

XII. ON EIGENFUNCTIONS

In my head, the Eigenfunctions of an operator is the state of particle AFTER measurement. Thus, after interaction with apparatus. Hereby the norm of an Eigenfunction (it means, $\langle \psi_i | \psi_i \rangle$) is 1. Thus, you can not express the INITIAL state as sum

$$\psi = \sum a_i \psi_i, \quad \langle \psi_i | \psi_i \rangle \neq 1,$$

where a_i is i-th Eigenfunction's the Eigenvalue. You simply put these different norms "by hand": any Eigenfunction is calculated with an arbitrary constant of multiplication. But all the norms must be equal to 1 (not the sum, but every one of it).

Note! It seems, that they use

$$\psi = \sum \psi_i$$

instead. But it is subject to same critics.

They often use for the system of two entangled particles

$$\psi = \frac{1}{\sqrt{2}}(\psi_{+\beta_-} - \psi_{-\beta_+}),$$

where \pm correspond to positive or negative direction in laboratory coordinate system. My critics: in Bohr's theory, there is no physical quantity, before it was measured. Thus, the functions like ψ_+ are the eigenfunctions of spin-operators. Thus, the initial function ψ is not that combination. Moreover, in the above ψ the parts correspond to different particles. Thus, it is hard to bring it all together.

XIII. SUPERLUMINAL TELEGRAPH

The Bohr's theory allows the instant (faster than light) communication [7]. So we could sent to Mars the robots only. Hereby without special acts of Omnipresent God. That would make the Einstein very angry!

XIV. DEFINITE EXPERIMENTAL PROOF

See Experiment nr. 10 of Isaac Newton in "Optics III". The interpreters of Quantum Physics did not explain strange "diffraction" on a narrow wedge-shaped slit (not the common rectangular hole). Surely, here perfectly works the Bohm's theory.

XV. VARIA

It is curious, that the basic equation of quantum mechanics is not produced from the dynamics of classical mechanics (because the $E = p^2/(2m) + V(x)$ is not the dynamics equation, but is the FORMULA for finding energy; here is the motion equation: $E = const$). However, the Bohm interpretation shows that Schrödinger equation contains the Hamilton-Jacobi equation. The Lorentz force in electro-magnetic field is not expressible through potential (non-conservative system). But the Lagrange'i and Hamilton formalism use only potentials. Thus, they are not complete descriptions of reality. The Newton's laws are more complete description, than the Schrödinger's equation. Does the energy-momentum tensor \mathbf{T} in General Relativity describe the "non-conservative" systems also? If yes, then zero covariant divergence describes the state of such systems.

Heisenberg's uncertainty $\Delta x \Delta p > h/(4\pi)$ does not include vectors, but they are vectors. So, if before the measurement was \vec{x}_0 , after the definite $\vec{x}_0 + \vec{\Delta}x$, also for impulse: $\vec{p}_0 \rightarrow \vec{p}_0 + \vec{\Delta}p$. Will it be $\vec{\Delta}x * \vec{\Delta}p > h/(4\pi)$? It is absurd-like.

Dr. Groote: "Bohmi teooria loobub (Einsteini) lokaalsusest. Sellega on aga Lorentzi invariantisus ohus." Mina: Bohm ütleb, et on olemas kvant-potentsiaal. Ehk mingi väli q . Kuidas ei või kvant-potentsiaalist saadud jõud olla neljamõõtmeline vektor? Olgu meil skalaar-väli määramata kujuga $q = q(t, x, y, z)$. Kuidas saada veel ühe Lorentzi suurust? Võtta kovariantne tuletis: $F_\nu = q_{;\nu} = q_{,\nu}$.

The facts: Klein-Gordon equation being Feynman-Stueckelberg interpreted, gives repulsion between matter and antimatter (Villata said [9]). That is hardly possible, otherwise the antimatter has negative gravitational mass, thus violating the positive energy conditions. Which it must satisfy, because it has positive energy in Feynman-Stueckelberg interpretation. Conclusion: the relativistic Quantum Physics is nonsense. The God's Grace is acting so, what the experiments show the elements of the theory. Because for small velocities we have single-particle equation, so for ordinary velocities we also must have the single-particle equation. Therefore the Klein-Gordon equation can describe one particle and probability distribution $\rho \sim p = \psi \psi^*$. Hereby the p must be of the same sign throughout the spacetime: the plus for positive charge and minus for negative charge. But for neutral object? It can not be zero, so the charge-interpretation is wrong. SO, the Special Relativity is in conflict with Quantum Theory.

"Tänu" Bohri teooriale (ja inimeste vabast tahest) internetis on ohtlik materjal, mille teema: "reaalsus on illusioon, on hologramm, on uni (milles me loome maailmad), on tulumukate mäng arvutis, on vaid meie hallutsinatsioon". Kui Bohm pakkus Jumala poolt heaks kiidetud alternatiivi, siis väga tore.

That's what happens, when you exclude God's Grace from the equations: The Collapse Of Physics <http://my.mail.ru/mail/tajnaa/video/7/169.html>. It is perfect video on YouTube: "Its The Collapse Of Physics As We Know it" <http://youtu.be/wHHz4mB9GKY>. The point: General Relativity is not compatible with Quantum Mechanics, there is no Quantum Gravity. Thus, logically, one theory is wrong. They in video said: "something fundamentally wrong". The singularities in General Relativity, if you do not like them, can be "healed" with a dozen of Dark Matter. In my book ISBN 978-3-659-50275-0 the Dark Matter is not matter, thus is solved.

Emeritus Professor Basil Hiley has not given a reference (however was asked to), only wrote: "Eqn (3) is verified in experiment.". Me: Thank You, friendly Basil. However the formula (3) may hold not for any source of entangled electrons. This source is between Alice and Bob. I suppose, the initial state of entangled pair is essential. However, the Bell supposes the uniform probability distribution while deriving formula (3), doesn't he? Thus, for Bohm, initially the spins can look in all directions, if the (3) holds. But that shall depend on the way of making the entangled pair.

Technical proof of God. The famous "double slit experiment", a camera A at slits records, a camera B at screen records. The records are not read, but put into envelopes: A and B. Open the B, and after burn A not looking in it. What do you saw in B? The interference pattern, or not? Probably the interference (Wikipedia's "Quantum eraser experiment" seems to agree on that, see "A key result is that it does not matter whether the erasure procedure is done before or after the detection of the photons." arXiv:quant-ph/0106078 and Zeitschrift für Naturforschung 54, 11-32). Thus, open the A and read. If you do, you can not have seen the interference. But in latter case burn the A and not look inside. Thus, you must have seen the interference in B. That is game with God (or devil), who decides what to do with you and your game. If to make detector of a particle at the slits without specification "which slit gone", this information will not "remove" the interference (that was done, see YouTube videos).

We do not live in mathematics - it is only imperfect description of Nature, we do live

around Physics. It is Greek word for Nature! Check in Wikipedia: "Mathematical universe hypothesis".

A. About God in viXra

Surely, there will be many surprises, when we see God. I am not sure does he laugh, on His "wavefunction" viXra:1210.0179, viXra:1401.0057. The Schrödinger produced his "cat" not for developments of Quantum Mechanics, but to stop it forever.

My review on viXra:1210.0179, I was interested in formulas:

Fran De Aquino: "Thus, if the consciousness we refer to contains all the space, its volume is necessarily infinite, consequently having an infinite psychic mass." Me: I prefer limited space Friedmann Closed Universe ($k=1$, finite volume model). The square of psi is not mass-density, but probability density to find an object in the given area. There is single Holy Trinity. Thus, in the Eq.(1) right hand is 1, not infinity. Fran De Aquino: "The particle will be everywhere simultaneously." Me: you do not understand the Quantum Mechanics. No surprise: it is wrong. The David Bohm interpretation + God's Grace provide the healthy alternative to Niels Bohr worldview. Indeed, the no-cloning theorem tells, that the particle is in one place. If the particle is everywhere, then mass of the system becomes infinite, after the gun fires. That violates energy conservation law for sakes!

My review on viXra:1401.0057:

Victor: Everything has a cause. Me: There are actions without cause, we call it "affect". For sure, you have not been in mental hospital, have you? Do not rest your precious faith on technical science – it is mental marsh full of evil spirits. Victor: God seems to equal with everything in this universe, Me: the Fran has infinite universe, so sure, he can put countless idols into it. Note, the Holy Trinity hates idols!

B. Perpetuum Mobile of the first kind

You are often being close to undead: the atheist's soul is dead. So look at another great thing: the <http://youtu.be/RkLfpXpO5sQ> and replace the magnet with Fishing Line and perhaps you need spring. The free energy device: wheel W , small wheel w moves inside W . The cord holds axis of w . The system is continuously in disbalance in the gravity field of

Earth. Thus, the wheels are turning if the many body problem has such solution (check its possibility). Or there are forces from God's Grace. A marked particle moves in force field $\vec{F}(t, \vec{r})$ can its velocity grow without limit? It is the necessary condition for perpetuum mobile. Yes, if there is constant force in the direction of motion for example.

Solution: my theorem of impossibility of perpetuum mobile. Suppose, the free energy device outputs 1 J of energy per each hour. Thus, after the coordinate transformation $t \rightarrow -t$, the same device consumes 1 J per each hour. Thus, it is not working in a closed system. Therefore, mathematically the dynamics equations must be time-irreversible. But the Newton's laws are invariant under time reversal. Besides Newton's Laws and foggy "quantum potential" the Bohm should have admitted the Free Wills of Creator and Creatures. Thus, any perpetuum mobile device in internet works on Free Wills. If the theory allows the time-asymmetry, is there necessarily the perpetuum mobile? The Schrödinger equation is asymmetric, but the high speed generalization is symmetric.

C. Quantum Tunneling

Take rectangular barrier, and the particle. On the barrier the solution of Schrödinger equation is (in Russian Wikipedia)

$$\psi_{II} = A_2 \exp(\chi x) + B_2 \exp(-\chi x).$$

The net particle current-density is from formula

$$J = i u \left(\frac{\partial \psi^*}{\partial x} \psi - \frac{\partial \psi}{\partial x} \psi^* \right) / 2,$$

where $u = \hbar/m$. That does not depend on position x within potential. Thus is satisfied the stationary continuity equation $dJ/dx = 0$. After the barrier is the same current. Perhaps there is dependence on potential width. The current before barrier is $J_I = u k (A_1 A_1^* - B_1 B_1^*)$, on the barrier $J_{II} = u i \chi (A_2 B_2^* - B_2 A_2^*)$, after the barrier $J_{III} = u k A_3 A_3^*$. The k and χ are positive and real. Holds $J_I = J_{II} = J_{III}$. That is 3 equations and 10 unknowns without the restrictions from the width a of barrier. However the width of the barrier plays the exponential role, see in Wikipedia the transmission coefficient. Thus, something wrong with accepted picture: the condition at abrupt points need to be re-examined. Why then the devices are working with incorrect theory? Answer: the God's Grace or devil's deception.

Looking on Schrödinger equation one concludes, that wave-function and potential barrier (and their first two partial derivatives) must be continuous. But in case of rectangular barrier its not the case. Here the blind faith comes in.

The Landau's book "Quantum Mechanics" (1972) demands, that wave-function ψ and its first derivative $d\psi/dx$ were continuous at the walls of the barrier. However, if to make the wall with angle δ (in respect to vertical), then is clear, that value of ψ at the bottom of the wall and on the top of it are different: $\psi_B \neq \psi_T$. There is no reason to believe, that in the limit $\delta \rightarrow 0$ holds $\psi_B = \psi_T$. The Schrödinger equation shows, that due to discontinuity at the wall the

$$\frac{1}{\psi} \frac{d^2\psi}{dx^2}$$

must change abruptly. So there is suspicion, that the ψ is not continuous.

The Landau's very long potentials (as example "kvasi-classical barrier" $a \gg 1$) are going in conflict with stationarity assumption: the time for experiment tends to infinity and the stationarity condition needs to be arranged in infinite time.

See also mistakes in N.B.Delone, The tunnel effect, http://www.pereplet.ru/nauka/Soros/pdf/0001_079.pdf Discontinuity at wall is the singularity, so it is blind faith, that $\psi_B = \psi_T$ is there.

XVI. THE BELL-LIKE INEQUALITY IN DENSITY MATRICES

Read [8].

In abstract's formula the density matrix includes $\rho' \otimes \rho''$. There is sum of direct product of $n \times n$ matrices. Thus, the ρ is not matrix. It has components like 4-rank tensor:

$$\rho_{ijklm} = \sum_A w \rho'_{ij} \rho''_{km}.$$

Thus, the Dr. Peres shall replace the symbol \otimes with scalar product, it means there shall be $(\rho', \rho'') = \sum_j \rho'_{ij} \rho''_{jm}$. But, it seems, that they use word "matrix" in some strange multidimensional sense. I propose to use word "set" or "collection" instead. But why Wikipedia has only $(n \times n)$ matrices and not $(n \times n \times n \times n)$ density matrices?

Peres: "matrices with unit trace, they can also be legitimate density matrices." Me: Thus, for given experiment, in physical sense the $\rho \equiv \sigma$? Thus, there are two alternative mathematical descriptions of experiment? Therefore, are the σ and ρ two interpretations?

Has the density matrix ρ_{nm} elements direct experimental correspondence? Seems like it is not the case. Indeed, the density operator contains not only probability of a result, but the wave-functions after the measurements. But these wave-functions often have not definite shape. The Peres's ρ_{ijklm} is just definition of new mathematical quantity. It is not density matrix. So how the Peres can find its trace, its eigenvalues? Perhaps through some imagined algorithm. Thus, these "trace" and "eigenvalues" do not correspond to reality. It's just a play. Perhaps such one:

$$\rho_{ijklm} F^{km} = \kappa F_{ij},$$

where κ is eigenvalue, and F_{ij} is eigentensor.

$$Trace(\rho) = \rho_{ijij}.$$

Let's read further the Peres's paper. Page 1414, left column. There is derived inequality $x < 1/3$ for Einstein to be correct. Surely, it is violated, because Bell's $x < 1/\sqrt{2}$ is violated. But what happens, if I nevertheless dear to insert $x = 1/2$ into the Peres's equations? I can not see clear, that formula (7) shows, that decomposition (1) or (4) would be violated with $x = 1/2$. Where are the details of Peres's calculations? In abstract he has promised to definitely proof the separability, if $x < 1/3$. The equation (8) holds only if $x = 1$, because is written "for a pure singlet", "single fraction x". I suppose, there is typing mistake and better be: "singlet fraction x". Also Peres writes on page 1413 "which is a necessary condition for the existence of the decomposition (1)." Thus, it is not sufficient condition, but nevertheless my $x = 1/2$ violates Peres's necessary condition. Why the authors are making the reader to do all important calculations for himself? It is certainly not the brotherhood they are presenting. So Peres simply said: believe me, I am honest!

XVII. NEW DEVELOPEMENT

The derivation of Bell's inequality does not include the formula (3). See Bell's Eq.(13). It has $\vec{a} = \vec{b}$. Latter must be in Eq.(14). But it is not the case.

The Bohm's book [10]. Page 143.

The Alice has 2 axis: \vec{a} and \vec{d} . The Bob has \vec{b} and \vec{c} . The Alice and Bob can use only one axis in every experiment. So they get P -s in serie of experiments. Therefore, the Eq.(7.17)

can not be derived from previous equations without large amount of faith. Can Eq.(7.17) be proved using the definitions of P -s?

The Eq.(7.17):

$$X := |P(\vec{a}\vec{b}) - P(\vec{a}\vec{c})| + |P(\vec{d}\vec{c}) + P(\vec{d}\vec{b})| \leq 2,$$

where

$$P(\vec{a}\vec{b}) = \int \rho P_A P_B A(\vec{a}) B(\vec{b}) d\lambda_A d\lambda_B d\lambda d\mu_A d\mu_B,$$

where the normalization of probability space:

$$\int \rho P_A P_B d\lambda_A d\lambda_B d\lambda d\mu_A d\mu_B = \int p(\Omega) d\Omega = 1.$$

Thus, we have

$$X \leq \int \{|A(\vec{a}) B(\vec{b}) - A(\vec{a}) B(\vec{c})| + |A(\vec{d}) B(\vec{c}) + A(\vec{d}) B(\vec{b})|\} p(\Omega) d\Omega \leq 2.$$

Thus, Eq.(7.17) is proved.

Thus, there is Bell's inequality, but the Bell did not derived it in his "groundbreaking" paper. The Bohm did. But the Bell got correct inequality (it comes from Bohm's) in wrong way. How Bohm's inequality can be violated in Bohm's theory? The God's Grace acts.

XVIII. ON ENERGY AND FREE WILL

The humans' Free Will is simply a miracle. On itself it is out of Physics, because latter speaks in terms of restrictions: e.g. released brick falls down with $g = 9.8m/s^2$: it does not levitate. In general a miracle is free of restriction. But the ACTIONS of Free Will are well be studied within Physics, e.g. David Bohm's "quantum potential".

The energy is not clear concept. What is energy? It is what one measures with calorimeter (P.S. the time is what one measures with clock, the temperature - with thermometer, etc.). Can calorimeter measure the energy of (flat) spacetime? No. Therefore the flat spacetime has no energy. However, if calorimeter would orbit the Jupiter the tidal forces will produce heat in the calorimeter: so it is just the (local) energy, which is extracted that unusual way.

XIX. DO THE EINSTEIN-MAXWELL EQUATIONS MEAN THE QUANTUM GRAVITY?

The electromagnetic potentials A satisfy the wave equation from quantum mechanics (D'Alembert's equation). Thus, the Einstein-Maxwell equations shall be considered is background for Quantum Field Theory (QFT). The wave-function A exists only on paper, and when there is demand for particle, then the particle emerges out of nothing. Therefore, the spacetime of the wave function shall remain flat: there is no matter $T=0$. Therefore, in distant cosmos the spacetime is flat. That certainly would be detected in observable cosmos. It is not the case. Thus, the General Relativity and QFT are not compatible. The way out of paradox is accepting the reality of particles. Therefore, in case of photons the stress-energy tensor of a single photon must be found. That of cause means, that the nature and all inner structure of micro-particles are taken into account. However the inner structure of particles has been derived using the QFT. The Einstein was worried, that the Science has been gone into mathematical fog. The loosing of QFT illusion means the return to Newton laws and Newton's faith in God's Grace, thus away from mathematical solipsism.

XX. HAS EINSTEIN "CAUSED" THE UNIVERSE?

Christian: "No-one can prove there is a God as you cannot prove there isn't... it all comes down to faith.". Me: There is plenty of proof, but which is rejected by Free Will of a non-repentant sinner. Therefore it is only an illusion, that one can not prove God. As example is my following notion. In principle, there is broad range $-\infty < w < \infty$ of the state $w = p/\rho$ of Dark Energy. But currently with 6 percent uncertainty holds $w = -1$ [<http://pdg.lbl.gov/2014/reviews/rpp2014-rev-bbang-cosmology.pdf>]. Has Albert Einstein discovered the Cosmological Constant (it is only for $w = -1$ theory) in the natural laws, or the Law Maker has red the Einstein's article about Cosmological Constant and created that way the World? Answer: Einstein has not studied observations, when he produced the Cosmological Constant idea.

So the motive was to make equations static, but God turned Einstein's idea into dynamical. However, as being NOT atheist, the Einstein could have been driven by Free Will idea to incorporate the Doomsday into the equations. See: R.R.Caldwell, M.Kamionkowski,

N.N.Weinberg, “Phantom Energy and Cosmic Doomsday”, Phys.Rev.Lett. 91, 071301 (2003). Besides, the Einstein could have liked the Big Bang (which is virtual, seeming – according to Young Earth Creationism), so his brain would not produced the Cosmological Constant at all. Therefore, there was no logical necessity to introduce the Dark Energy with Cosmological Constant.

XXI. THE UNIVERSE IS NOT HOLOGRAM

Bhushan Bhoja Poojary: Which experiment can determine if our universe is hologram or not? Rev Mod Phys 2002;74:825-874 (arXiv:hep-th/0203101). Me: Try Google: ”Integral challenges physics beyond Einstein”. Just accept this fact, please. Besides, how the hologram could be realized technically? I close my WC door, then how the light comes through the walls from the EDGE of Universe to create the image of the WC pot behind the closed door? If the door is hologram, then why the light from outside does not penetrate into the WC? Why the light from bathroom candle can not, but light from edge of Universe can (to create image of pot)? 2) Even in movie Star Wars the holograms are not perfect: everyone sees, that it is made of light. Can we create realistic hologram? Do we need water vapor to create 3D hologram? 3) So, if the 3D world around us were a collection of light, then all action and real stuff is in 2D surface on the edge of Universe. Can we be 2D organisms? We would be not receiving 3D information, we would be part of 3D projector. Thus, the all 3D world action would be the action in our 2D world. So the Jesus Christ was crucified for real, even if the world is hologram. On the experiment, Fermilab E-900: <http://holometer.fnal.gov/index.html> Bhushan Bhoja Poojary: ”I guess you should not compare Holographic principle with normal hologram which we have. It is in advanced form doesn’t use photons to project objects. DOI: 10.7763/IJAPM.2014.V4.279”. Me to Isabelle Bourgait: In your hypothesis is no device, no projector, no hardware. Only a hologram? How technically it is made without any real device?

XXII. COPENHAGEN INTERPRETATION AND DE BROGLIE HYPOTHESIS ARE ENEMIES

The interpretation tells, that light is wave, which becomes the photons only on the target/screen. Note, that photons on screen are at rest, however there are no photons at rest: thus, there are only waves and none photons - according of copenhagen interpretation. However, there are photons: thus, the copenhagen interpretation is nonsense. Back to first sentence. The de Broglie hypothesis $p = h/\lambda$ tells, that light is in the same time both photons and wave: to any particle corresponds the wave, not the particle transforms into wave (in latter process the particle is surely partly wave and partly photon). Thus, it is enemy of copenhagen interpretation, which supposes, that light is wave or photons and not both of these the same time. Check the "de-Broglie Bohm theory". The critics came: "In my humble opinion, there is no problem with de Broglie hypothesis, see for instance his Nobel lecture: http://www.nobelprize.org/nobel_prizes/physics/laureates/1929/broglie-lecture.pdf", quote "Thus to describe the properties of matter as well as those of light, waves and corpuscles have to be referred to at one and the same time." (LOUIS DE BROGLIE, 1929). There can not be a multiple valued logic, despite the article in Wikipedia. There can be multiple variants, but the logic has only "No/Yes" as the answer to a variant. Wave is not particle. Thus, there is Alogismus (German wikipedia), which, thus, is impossible in nature. The God is above the nature, in latter the logic law is valid. Here in quote the DE BROGLIE starts dictatorship: "on this concept of the duality of waves and corpuscles... all future development of this science will apparently have to be founded." From this came some dictator lines in the American Physical Review, which, I am sure, will reject my paper "Can Niels Bohr's Philosophy be Wrong?" (viXra:1409.0177), at least the Phys.Rev. has not suggested to publish it.

"There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy." (William Shakespeare, Hamlet, Act 1. Scene V). The quasi-static electric charges do have the field around them, which follows the law of Maxwell. This field is not the mathematical probability, nor it has the virtual photons. Let us very gently and slowly to shake the electric charges. Obviously the values of the field will continuously change. Thus, there are waves, which are not photons nor probabilities. The David Bohm would say, that it is kind of quantum potential. I say, that it all under control and fine tuning of the God.

This all is called: Grace.

XXIII. THE WAVE FUNCTION OF UNIVERSE?

The Wim B. Drees's critics on Hawking's idea is in [13]. Wave function is claimed to completely describe the reality. The wave function is not given. One can not write Ψ without any particular form and talk about the complete description of all there is. Is the Grand Truth the Psi? The latter is nothing, because is not presented as function, it is only a symbol. I well might write "Gamma" and say, that it is wave-function of Love. Dear H Chris Ransford, thank You. 1) The people are different: I simply got an unique style and original connection map between the brain cells. 2) The wave function of Universe is hardly possible even in principle, because the scalar particles in Universe assume to have scalar wave function, the vector particles (photons, electrons) have vector wave function, the bosons have Bose-Einstein statistics, but fermions have Fermi-Dirac statistics. Suppose we have wave function of an electron E^i and function of neutrino N^k , the system function can not be the tensor $S^{ik} = E^i N^k$ (because it is never heard), thus, shall be the sum $S^i = E^i + N^i$. Then suppose you have scalar particle too, logically you must add its wave function f : $E^i + N^i + f$. But latter is impossible: it violates the vector algebra. Thus, there is no wave function of Universe or some other system. 3) But let's put it all aside, how looks the wave function of the Friedman Flat Universe, if it would be filled with dust-like medium. I speak about large scale, not about the grains of dust. Can there be two levels of the wave function, I mean, what on the macro-scale the wave function asymptotically assumes much more simple form? If Yes, I am sure the Hawking can present it, if the Bohr's vision of Quantum Mechanics is correct.

Chris: As long as decoherence has not set in, an established Schrdinger continues to be valid (as is experimentally confirmed by Alain Aspect's and Nicolas Gisin's experiments).
Me: Yes, You have missed my point. Suppose you have two particles: an electron (E^i) and theoretical sterile neutrino (N^k) with non-zero mass. Particles are confined to some area. There is no interaction at all, however the two wave functions (E^i, N^k) do cover each other. How is expressed the wave function ($S^i = f(E^i, N^k)$) of the system?

XXIV. PLANCK SCALE VS. EINSTEIN

Aleksei Bykov: 1) if during the measurement we localize a particle to strongly, due to ordinary Uncertainty relations, high energy and momentum density appears. 2) High energy and momentum density according to Einstein's equation lead to strong gravity field 3) If gravity will be too strong, black hole will appear, that will made measurements impossible.

Me: Your points 1),2),3) violate the Principle of Relativity. But latter is law. Therefore a co-moving observer A does not observe the increase of gravity. So the near luminal spaceship/particle is not like the black hole for this observer. Is there a peer-reviewed paper, which calculates the gravity field for the laboratory observer B? If Yes, then is there the event horizon derived? I am sure it can not be: the event horizon means the change from spatial into temporal direction: any object inside the horizon will be crushed into a mathematical point – singularity. Thus, the observer A for sure will be dead. But latter is impossible. Thus, there is no black hole production.

Suppose particle U is in collision course with particle P. There is no event horizon long before the collision, and I see no reasons to build event horizon just before the collision. Just before the collision is the same energy as during the impact. And till now there is no black hole. After the impact the products of collision are flying around with near luminal velocities. Is there the event horizon? No, because outward motion inside the event horizon is not shown to me by "Physical Review". Therefore, after the collision there is no black hole either. Conclusion: the LHCollider is safe in respect to Black Hole possibility. Also I've here the explanation, why cosmic rays do not produce the so called Micro Black Holes. MY MATERIALS and IDEAS ARE COPYRIGHTED.

The Schwarzschild sphere can not grow around the collision point, because then the gravitational mass of collision would grow in time, which violates the Einstein Equations, if there is no Dark Matter-type corrections.

If the particles U and P are very dense object, but not yet a Black Holes (for A-type observers), then their collision could produce Black Hole. This is the subject of further investigation Y. Note that in previous case the U and P are far from being the Black Holes.

A. Investigation Y

Let the matter mass-density $\rho = \text{const.}$ I have $m_U = m_P = 4\pi\rho r^3/3$, $M = m_U + m_P = 4\pi\rho R^3/3$, $2m_U = r$. It follows, that $R < 2M$. Therefore the two Black Hole collision produces the black hole in this simplified consideration. Let us consider case $r > 2m_U$, i.e. $r = (2 + d)m_U$. It follows, that when $d > 1.174802104$ there is no Black Hole. Check does the law "the total surface area of the Black Holes' event horizon can not go down" holds in this simplified model. $S = 4\pi(2M)^2$, $s = 4\pi r^2$, does the law $S \geq 2s$ hold or not? Answer: yes, the law holds even in this, simplified model.

XXV. TALKS

Sadeem Fadhil (PhD, University Lecturer) is asking: "What's the interpretation of single photon interference in a double slit experiment?". Me: Dear friend, a single photon produces a dot as the impact place on the screen. How from this single event a wise-man can deduce the interference? P.S. My deep respect of your scientific degree, I am just the Master of Science, thus can be very wrong.

Dr. Fadhil: "How does quantum mechanics look for this interference?" Me: According to article John Polkinghorne FRS (the Templeton Prize, Fellow of the Royal Society), "Physics and Theology" (Europhysics News 45/1 (2014)) both Bohr's and David Bohm's theories are not excluded by empirical evidence. Do you mean Bohr or Bohm theory under QM? They are opposite, incompatible, like Verity vs. Delusion.

To my not quite humble opinion, the reality takes in some extent the regard of our theories. It is not direct link between our fantasies and reality. The God's decision is in between. Such is the target I was directing your minds all the above comments. Thank You for attention to my sinful soul.

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