

Howell's review of Brett Holverstott's 2016 book :

# "Randell Mills and the search for hydrino energy"

<http://www.BillHowell.ca>, 28Dec2018 draft

## 1 SUMMARY - Overall impression of [Randell Mills, hydrinos, Brett Holverstott, book]

Brett Holverstott 2016 "Randell Mills and the search for hydrino energy" KRP History publisher, 437pp, ISBN: 978-0-692-76005-5  
[www.BrettHolverstoot.com](http://www.BrettHolverstoot.com)

This is a great book. Period. I'm not often that "strongly enthusiastic" with [a scientist, his concepts, an author, a book], but this book really stands out, and I highly recommend it for anyone who likes physics, or who is troubled with the [philosophy, practice] of science and other approaches to thinking. It also is a lot of fun to read, with many stimulating ideas, crazy or not.

Since ?1980?, Randell Mills has constructed a solid "axiomatic" (borrowing the term as used by Lucas) set of theories that, OR [right, wrong, true, false], overcomes the failures and limitations of quantum mechanics. It is one of those very rare triumphs of combined [instrumental, experimental, theoretical] efforts to break past a science fashion-cum-cult-cum-religion that is absolutely NOT a characteristic of scientists - it is an exception to how essentially ALL scientists think and work. It was the "fractional quantum levels of electrons" that first caught my eye in Randall's work (circa 2008-2012?), having been familiar with the concept through Bill Lucas's work.

My guess is that Randell Mills is "potentially one of the greatest physicists & chemists, to be compared to [Archimedes, Galileo, Newton, Faraday, Maxwell, Edison, Tesla, Lucas]". Mills has a greater range of "greatness components" than any of them : [instrumentation, theory, models, experiments, people management, business founder, fundraiser], even though one can argue about any single point. Notice that Einstein, never a favourite of mine, is definitely NOT on that list, nor are Max Planck or ?Ernst Mach? (even though both Mills and Einstein seem to be fans of the latter).

Given the [tired, hidden, long-term] [failures, limitations, constraints, incompleteness] of the "standard models" of [GR, QM], I suggest that the only SUBSTANTIAL comparison for Randell Mills is with William Charles Lucas, whose work is so often similar to Mills' in its breathtaking power and scope, and in some ways it overlaps with Mills' thinking and theories. Lucas' concepts are even more basic and general than Mills - as he crushes not only quantum physics in his own way, but General Relativity, and a number of other physics themes as well. Lucas also has interesting comments to make about biology, like Mills.

A huge surprise is the [intellectual, philosophical] strength of the author, Brett Holverstott. To me, he easily surpasses the "strong thinker" level (<1:10,000 scientists or any other group for that matter). There is a huge gap between the ideal of science and how it is actually practiced and assessed, and this book is one of the best I've read on that subject. My guess (hope?) is that Holverstott may become a leader in putting philosophy back into the game, partly because he can do both, but mostly because he can think.

Note that I haven't read Randell Mills' textbook yet, most importantly I haven't done a step-by-step re-derivation of any of his key [math, concepts, analysis, experiments]. However, many of his ideas are very close to concepts I have been looking at closely.

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## 2 List of tables and figures in Holverstott's book

See the Table of Contents above for a listing of chapters in the book. The list of figures and tables below is NOT 100% complete - I've included just scientific illustrations and tables, and not all of those. These lists are provided so that readers won't waste huge amounts of time trying to find things in Holverstott's book.

- p37 The Bohr model of the atom
- p44 Quantum wave-functions of the hydrogen atom
- p60 The condition for no radiation (for an electron in orbit around a nucleus)
- p63 The electron orbitsphere
- p65 Force balance equations
- p66 Resonant transfer - non-radiative energy transfer between two resonating structures mediated by the coupling of their "evanescent tails"
- p67 Hydrino [states, energy hole eV, binding eV]
- p68 Hydrino states of the hydrogen atom
- p69 Atomic catalysts capable of undergoing resonant absorption of approximately  $m + 27.2$  eV of energy from a hydrogen atom to produce an  $H(1/(p+m))$  hydrino.
- p90 HT or  $D_2(1/2)$ ? (Hydrogen, Deuterium, Tritium)
- p91 First XPS identification of  $H(1/2)$
- p93 Hydrino hydride polymers - XPS spectrum from 0 to 80 eV of the polymeric material
- p99 NMR identification of alkali and alkaline Earth hydrides showing dramatically up-shifted peaks of tightly-bound hydrino hydride ions
- p103 The free electron
- p109 Exotic ion peaks discovered by injecting electrons into super-fluid helium under an applied field
- p127 Hydrogen excited state transitions (Angstroms) - integer quantum levels of electrons
- p142 Modulation functions - Quantum versus Mills
- p146-7 The architecture of the atom - partial periodic table for the first 20 elements. Atoms are shown to scale, with accurate internal structure of atomic orbital shells.
- p154 Chemical structure -  $H_3^+$  is composed of three intersecting prolate spheroidal shells
- p155 Chemical structures -  $H_2O$ ,  $CH_4$  The prolate spheroidal hydrogen bonds terminate at the surface of the oxygen atomic orbital shell. After (Mills 2015, ch13)
- p157 Chemical structures - Ethane, Ethene, Acetylene
- p157 Chemical structures - Examples of organic molecules - Propanol, Acetic acid, ethyl methyl ether, acetone, acetaldehyde, methyl acetate. In Mills's theory, functional groups are semi-independent units, from which molecules of arbitrary size and complexity may be computed easily.
- p157 Chemical structure - Carbon fullerene ( $C_{80}$ ) Composed of 60 carbon atoms joined by 5 and 6-membered fused rings. After (Mills 2015 ch17)
- p157 Chemical structure - LIFE: down to the last electron. DNA shown using Millsian software, the exact location of every electron is known - as well as the exact charge distribution profile across every bond!
- p198 A massive flood - Eastern Washington scablands. Evidence of the destruction of the landscape on a biblical scale. In 1927 the USGS officially denounced Betz' theory and it was decades later that the theory was finally accepted.
- p215 Plasma thruster test chamber - Shown with a test thruster adapted from BLP's hydrogen-neon plasma cell with a hollow cathode assembly.
- p244 Table of Hydrino state versus NMR peak - BLP's assignment of peaks from a series of  $^1H$  NMR spectra of helium-hydrogen plasma gases condensed with liquid nitrogen and dissolved in  $CDCl_3$ . (Mills 2007)
- p246 "Unknown" NMR signature - Expanded NMR spectrum of an  $LiH + LiNN_2$  mixture ball-milled for 180 minutes and et rest at high temperature for 4 Hours. (Lu 2007) Mills suggested  $H(1/4)$  hydrino.
- p248 "Additional impurity lines" (Ulrich 1998) versus Mills 2007 predictions. Electron beam maintained plasma Argon with  $1p249$   $H(1/4)$  Hydrino hyperfine structure? peak at  $21.4cm^{-1}$  far-infrared absorption spectrum
- p257 Rotational velocities of the Andromeda galaxy (Rubin & Ford 1969, Rubin 1970)
- p260 A galactic collision and a cosmic birth - dwarfs have only twice as much dark matter as normal matter.
- p263 Seeing in extreme ultraviolet (instruments)
- p266 EUV emissions from a hydrogen plasma - 98% He 2% H at 1 torr, observed versus calculated hydrino transitions (Mills 2003E)
- p268 Table EUV peaks : Labov & Bowyer's diffuse background of sounding rocket launch in 1986 versus BLP's 98% He / 2% H plasma cell.
- p270 XMM-Newton spectrum of 73 galaxy clusters (Bulbul 2014). Mills suggests unknown 3.57 keV is  $H + H(1/4) \rightarrow H(1/17)$
- p283 The universe - young (14 billion y) versus old (300 billion y)
- p285 Oscillating universe (Mills 1995) - radius, expansion rate, power, CMWB
- p300 Heat-flux calorimetric assembly (Rowan University)

p302 Pinched-Discharge plasma (Mills 2010,2015)

p303 EUV emission spectra of high-voltage discharge in H. Mills hydrino transitions

p320 Newton's bucket

p327 The Central mystery of quantum theory : the double slit experiment - Mills interpretation

p344 Coronal loops on the surface of the Sun, which emit in the EUV and Xray bands

p353 A neutrino observatory

p357 Micro-explosions apparatus, current through water and metal powder

p359 Spectra sun versus Mills water-metal powder explosions

NOTE : May help Pierre-Marie Robitaille?! (Spectrum of Sun)

p362 The white dwarf : a hydrino star?

p363 CIHT molten electrolyte cell at 420 Celsius

p368 First suncell prototype

p388 Torsion balance to test equivalence of gravitational versus inertial mass

p395 Tractoid - surface of constant negative curvature

Tractoid velocity distribution on the orbitosphere

p397 "Fifth Force" test chamber - pseudo-electrons that may repel gravity with strength  $10^{12}$  times force of gravity

### 3 Through Darkness and Light come Humility

Howell "... We are all maggots ..." Howell "... Good times and rich opportunities are fun, but it is the hard times that build character. ..."

At present, I feel that the most [solid, axiomatic, complete] basis to fundamental theoretical physics at present is Lucas's "Universal Force" theory, which incorporates earlier work by [Newton, Barnes, ?Bergman?, ...], and which addresses the [incomplete, incorrect, information loss] nature of Maxwell's theorem and subsequent modifications (eg [conservation of energy & Poynting vectors, 4 vector form, covariant form]).

But Mills work is VERY commendable insofar as it goes, and may provide a valuable different perspective to [complement, correct, augment] Lucas' theory, and to replace quantum mechanics with much more [solid, coherent, physical] framework, that is, axiomatic thinking.

### 4 Dark Answers to Dark Questions, and my Principle of Generality

As with many, if not most, really great thinkers, Mills has been subjected to [ridicule, resistance, dismissal, ostracism, active & persistent attacks] by lesser minds, including top cited and awarded scientists along with essentially all other experts in the area. To me, if a scientist (or any other type of specialist) isn't subjected to this, then it is highly unlikely that they are a great thinker. Consequently, a great way to find a great thinker is to look for widespread condemnation of a person, assurances by the anointed leaders that he is the devil and should be banned. Sometimes you'll find the devil, and sometimes greatness (apologies to the devil for not classifying him as great).

Much of the criticism that I have read of Randall Mills consists of ad hominin arguments ("against the man"), of an [arrogant, emotional] "knee-jerk" nature, rather than being [considered, competent] consideration of the [data, concepts, experiments, analysis, results]. There have been insightful comments and criticisms of specific points in Mills work, but among all that I have read apart from this book, NONE seem adequate and thorough, nor [do they, can they] respond to Mills' pointed criticisms of quantum mechanics. Such is the nature of the disciples of scientific religions, who are defenders of the faith.

I will keep my eyes out for competent criticisms in the future, but already the lack of [quality, substantive] criticisms over a period of ~40 years is in itself the most sincere vote of confidence in Mills' work.

#### 4.1 Is Mills [right, wrong, true, false]?

This is a critically-important question for essentially all scientists, who seem bound and determined to jump to all the wrong conclusions in order to have a definitive answer, to possess "the truth". This is one of the key contributors to the ongoing farce of mainstream science [fashions ->cults ->religions], which afflicts essentially all of established science.

In a nutshell, all theories are wrong, but after reading about some of the details of Mills' theories and thinking, my guess is that he is far less wrong than all scientific disciples of mainstream quantum mechanics.

My introduction to Mills and his work was through scientific papers that paralleled some of his concepts, and I read a few [articles, comments] ten or so years ago. Holverstott's book is the most reading that I have done on the subject. I estimate that I would require two to five years to go through step-by-step re-derivations of key parts of Mills work, based on his treatise, as opposed to the general descriptions in Holverstott's book.

But while I am not in a good position to have a strong, considered opinion on [right, wrong, true false], that very question is not so important to me. To me, what counts is that : a scientist can think [creatively, critically] according to my "Principle of Generality", that is outside the [foundations, framework] of the prevailing science religions; and that his ideas are [stimulating, fresh, well considered]. If so, he is at a level of  $<1$  in (100,000 to 1 million) scientists. Mills is easily at that level, whereas I'm not sure I'd put any modern [Nobel laureates, scientist-celebrities] in physics at that level, certainly most of the modern scientist-celebrities like [Stephen Hawking, Mairato, ??] who I do NOT consider to be at that level.

Far more important to me is my self-imposed approach of "multiple conflicting hypothesis" (MCH), whereby one retains and eco-system of diverse and often conflicting [ideas, concepts, theories], including the mainstream dominant ones of today and the past. If only a lie exists to contrast with the mainstream religion, then the lie will be useful. Theories are there as tools for me to use or not. I am NOT a tool of a theory.

As the old saying goes :

"... All theories are wrong, but some are useful. ..."

To which I add :

"... And the most successful scientific theories, which have passed from fashion ->cult ->religion, ultimately become our greatest impediment to progress. Disciples defend the truth and attack heretics, and [inadequate, flawed, bad] science theories persist for decades, centuries, millenia. ..."

No big problem, as we're all human, whatever that means. This has been the case for millenia...

## 4.2 Is Randell Mills a fraud?

I very much doubt this, having (I hope) some ability to separate wheat from chaff after decades of watching no end of "turbic thinkers" succeed in most areas of mainstream science and scientists. In a sense, I have long followed and gathered information on the "Lies, damned lies, and scientists" (???web-page), by essentially all [government, academic] scientists, and I don't see the common manifestations of "turbic thinking" in his work. I am also impressed by Mills' [experiments, theoretical developments, analysis, leadership] described in the book, and I had already come across the "fractional quantum levels of electrons" in the work of very credible people.

But I could be wrong. It's EXTREMELY interesting that Holverstott doesn't express a categorical answer to this question, and that I have an uncertain feeling for how much his opinion has influenced my own. I had enough of a positive feeling towards Mills' work and ideas before before reading Holverstott's book, and it's richer and stronger stronger now.

The REAL question is - why would that even matter? Randall Mills as an individual, or even with his teams and collaborators, couldn't possibly attain the [magnitude, number, diversity, extremes] of "turbic" thinking over the last 120 years by essentially ALL mainstream physicists. One man cannot do the work of tens of millions. Even if Mills' work is fraudulent, then it makes a nice contrast and addition to pyramids of "multiple conflicting frauds". Even in that sense, his work has a positive value that essentially none of our [government, academic] scientists can match.

I do think that most of his critics are "frauds" (actually "turbic" thinking and behaviours). More on that later.

Randall Mills' total funding for all his efforts and companies is absolutely insignificant compared to the ongoing castles of fraud in fundamental theoretical physics. And unlike the mainstream con-scientists ("the science of the con"), he didn't steal money from me (my taxes) or all the politically-correct social causes to get the funding. Investors had a choice, which is not something that a socialist would ever understand.



## 5 Quick Comparison : Randall Mills versus [General Relativity, Quantum mechanics, William Charles Lucas, SAFIRE sun]

It is helpful to compare Randell Mills's theories to the "standard science" theories of [General Relativity, Quantum mechanics]. As Mills has essentially adopted all of GR as a foundation for his work, there really isn't much difference between GR and his work, except for a modified Swartzchild radius in his concept of gravity. To me, this is a KEY weakness of his work! It will be very interesting to see if he eventually converts to a "strong thinker" with respect to GR, but as I state elsewhere, in my experience few "strong thinkers" on one scientific theme are also strong thinkers on other flawed religions of science.

To me, the profound comparison is between Mills's theories and the combination of [William Charles Lucas, Ed Dowdye Jr, Jefimenko], but in particular Lucas. There is substantial similarity between Mills and Lucas on many points, including : - experimental backgrounds - my guess is that Mills is much more of a "hands on" experimentalist than Lucas, who I think - fractional quantum levels of electrons, which was what made me notice his work in ~2012, having seen this in a student science booth display of the work of Lucas's son, hosted at the time I saw it by Lucas himself. - It is fascinating to see the contrasting models of the electron used by Lucas (soliton) and Mills (spherical shell distribution). Are these mathematically equivalent to a large extent? - They explain [free, Rydberg] electrons somewhat differently. Luckily, with a "multiple conflicting hypothesis" (MCH) approach, I feel NO pressure to pick one or the other, but retain both, along with the standard QM (in spite of its flaws and strengths - it is a requirement of MCH to maintain current and past scientific religions). Very, very few of the world's [strong, breakthrough] thinkers chose science as a career. If a non-scientist thinker of that caliber takes a serious hobby interest in a scientific theme, they can readily beat the best scientists in that area on at least some points.

Jefimenko, whether [right, wrong, neither] provides a beautiful, strong basis for questioning the basis for physics concepts on what feels to me like a "dimensional analysis" basis, that is important for me, again, whether right or wrong. It helps me to break past a prison that AI would not have escaped from my self.

The [Electric Universe, Plasma Universe, SAFIRE project] (EPS) themes don't really address most of the points below, other than gravity, but I feel that their perspective on [astronomy, biology, etc] is refreshingly different, and the SAFIRE experimental model of the sun already has achieved a great deal, in contrast to many ongoing failures of >120 years of fundamental theoretical physics and astronomy (in spite of many successes). Key also is that they reflect a new reality in science. As more amateurs have greater and freer access to scientific journals, the best are beating the best of the [government, academic] scientists, and they are sometimes the ONLY bulwark tackling the turbid scientific religions.

At present, I feel that the most [solid, axiomatic, complete] basis to fundamental theoretical physics at present is Lucas's "Universal Force" theory, which incorporates earlier work by [Newton, Barnes, ?Bergman?, ...], and which addresses the [incomplete, incorrect, information loss] nature of Maxwell's theorem and subsequent modifications (eg [conservation of energy & Poynting vectors, 4 vector form, covariant form]).

But Mills work is VERY commendable insofar as it goes, and may provide a valuable different perspective to [complement, correct, augment] Lucas' theory.

Obviously, I haven't quite finished the list nor my comments. I do NOT intend to make a comprehensive list - that would be far too long. Disciples of the great scientific religions will be fully justified in their [rage, protests] against such [heretical, trivial, erroneous] comments. The very different class of critical thinkers will be as disappointed as I myself am, but elaborations and backup [data, analysis, meth] must await some time in the distant future, even though a number of useful references are provided (see the section "Howell's references").

Theme	General Relativity	Quantum Mechanics	Randell Mills	Lucas,Dowdye, Jefimenko	EU,PlasmaU, SAFIRE
axiomatic	fails	fails	good for QM, fails with GR	good	n/a
c is not constant	fails	fails	fails	fails	n/a
relativistic correction factor	has it, ?but incorrect concept?	has it, ?but incorrect concept?	has it from GR ?but incorrect concept?	Lucas yes, classical	n/a
superluminal speeds	no	no	no	maybe?	maybe?
effective mass	has it, ?but incorrect concept?	???	???	Dowdye yes, classical	n/a
mass versus matter	fails	???	???	Lucas derives via Mach's principal	n/a
interferometer tests	fails	n/a	fails	n/a???	n/a
bending of Mercury's light gravity fails	gravity fails	n/a	gravity fails	good - plasma refraction	good - plasma refraction
atomic clocks	fails	n/a	n/a or fails	???	not yet?
radiation reaction	???	???	???	resolved, axiomatic	n/a
electron radiation	n/a	[fails, ignores] (non-physical)	OK spherical shell distribution	OK soliton model	n/a
electron fractional quantum levels	n/a	fails	OK spherical shell distribution	OK soliton model	n/a
sub-atomics	n/a	works but poor	???	resolved, axiomatic	n/a
gravity	non-physical, non-unified	n/a	OK - different Swartzchild radius	OK - derived directly	OK - long stated
strong nuclear force	n/a	required as fudge	???	eliminated as not required	n/a
weak nuclear force	n/a	required as fudge	???	eliminated as not required	n/a
Newton's bucket	Einstein failed to resolve	n/a	???	???	n/a

Notes :

axiomatic (Newton) - eg [complete, coherent, phenomenological, ???]

c is not constant (fine structure or  $c/h$  may be)

relativistic correction factor (Lorentz-Poincaré actually)

RM has it from GR, but incorrect concept

but incorrect concept

effective mass

interferometer tests

bending of Mercury's light - Dowdye shows that gravity fails, it fits plasma refraction

EPS plasma refraction works, classical, slowing of light by factor of  $\approx 1,000$ ?

atomic clocks

radiation reaction

electron synchrotron radiation

electron fractional quantum levels

sub-atomic particles

QM high # of parameters, [quirky, arbitrary, not understood] rules

RM ???

LD resolved, axiomatic

gravity

GR non-physical, non-unified

QM n/a

RM non-physical, non-unified, different Swartzchild radius, has anti-gravity concept

LD OK - fourth order neural vibrating dipoles, EM derived simply

EPS OK - Electric Universe has long pointed out that gravity is EM! (Poincaré theme as well)

strong nuclear force

weak nuclear force

Newton's bucket

mass versus matter

## 6 THEMES of Randell Mills

Rather than write up a [complete, coherent] commentary on Randell Mills themes, I have merely listed a few [random, scattered] comments that I wrote while I was reading the book. These are a repeat of the chapter-by-chapter detailed commentary at the end of this review.

Here's a [quick, incomplete] list of Mills' themes :

### 6.1 Early work of Mills (interesting results but 1st two never commercialised...)

~1984 Cancer treatment - Mills invented "Mossbauer Isotropic Resonant Absorption of Gamma Emission" (MIRAGE)

~1987 Medical imaging - Mills invented "Magnetic Susceptibility Imaging" (MSI - may have some advantages over MRI)

mid80s genomic sequencer- concept prepared for presentation, but not flushed out

~1988 HIV treatment - low-dose, high effect target-site drug activation ("luminides")

- Mills invented chemiluminescent-photochronic free radical generation

1992 - founded & fundraised Luminide Technologies

~date? Artificial Intelligence - proposal for how the brain computes

- Fourier series basis, association via spectral analysis and probability functions

- Howell - To me this sounds avant garde for the time!! :

- similar ideas have been tried in Neural Networks research

- Deep Learning is great, but not the be-all-end-all.

## 6.2 fractional quantum levels of electrons - a key concept

normal photon ejection doesn't apply - with interesting implications and potential normal [AA, Xray, ???] spectrograms don't detect

This concept led to "physical" (phenomenological?) models :

blah-blah [electron, proton] spherical shell spread of ?circulating charge? without sub-units?

not entirely clear, as the discussions imply sub-particles even though denied (confusing)

This is a key issue - as arising "resonances" are important explanations of phenomena.

neutron - nuclear electron-proton association?

Strangely, Mills does not extend the H137 to a description of nuclear hydrogen?

atomic bond descriptions and arising chemical structures (p68 illustration)

far better than quantum mechanics, much faster, much more coherent, tied to physical concepts rather than being a prisoner of universal function appropriators and statistics that make lousy concepts work well. And rational... (imagine that)

## 6.3 The Hydrino - hydrogen atom with fractional quantum level electron

fractional quantum levels for hydrogen

p68h0.05 1/2, 1/3, 1/4, ... 1/137 maximum level (smallest atom of H), beyond which electron would be >speed of light

resonant coupling - catalysis to produce hydrino (H atom with fractional quantum levels)

fractional quantum levels [CAN'T, DON'T] emit a photon!! Must be catalysed back to integer quantum level, resonant inductive coupling p67h0.2.

hollow spherical shell model of sub-atoms, non-point electron, etc. - p64h0.45 first-ever internally consistent model based on classical physics (before Bergman, Lucas?)

"Electron orbitosphere" eliminates radiation problem of [Bohr, quantum mechanics] models, avoids the use of singularities. It accomplishes this by non-radiating [geometry, frequency] matching (resonance)

physical explanation of shells of electrons & periodic table of elements

explains many anomalous spectra peaks, which are usually ignored by mainstream, or given stretch-explanations

p108 Mills calculation of "excited electron states in superfluid helium bubbles" to match commonly seen in experiments - p109h0.95

"... the electron is a knowable thing, with a shape and size and behaviour that is very classical ..."

## 6.4 Hydrino predictions as alternatives to quantum mechanics

Apparently, Mills conceptually crushes quantum mechanics where the latter actually works, even though the latter is a very good pragmatic tool, thanks to a combination of statistics and small-world universal function approximators that [patch-up, compensate for] a flawed and incoherent set of concepts to work in practice.

Quantum mechanics fails miserably for :

Chemical structures - it has taken decades to go beyond the simple hydrogen atom!

Not only do Mills' concepts attain equal-to-or-better accuracy than quantum mechanics, he does so with a clear physical model, coherent reasoning, and far less adjustable parameters. Unlike quantum mechanics, his concepts are readily extended to complex chemical structures.

Cold fusion - Possibility that hydrinos may explain cold fusion? pp77-94 - also alternative to Low Energy Nuclear Reaction (LENR) hypothesis

dark energy & matter in astronomy

tangential velocity profile along radius of spiral galaxies

spectra and unexplained [peaks, shifts]

## 6.5 Gravity

18Dec2018 p394h0.55 "... Recall that according to Mills, gravitation is a result of electromagnetism, or rather, relativity. It is a field of contracted space-time that is produced by circulating currents when a particle is born. Mills reasoned that if those currents

define a three-dimensional surface of constant curvature, such as a sphere, a particle responded normally to gravity. After all, everything we see around us is made from particles that have this structure. ..."

>>\_22Dec2018 Sounds nice - but what is the basis of this assumption? Is "contracted space-time" a physical or purely mathematical concept? I guess I'll have to read his papers ...

## 6.6 focus on energy-related potential

Mills looks at unidirectional water-to-hydrino process with energy production intensity intermediate to [chemical, nuclear fission]

Most (but not all) of his work focuses on ELECTRICAL energy production via electrochemical cells in the [aqueous, gas, plasma] phases, and catalysis to bring it to commercial [rates, densities]. Although this is understandable to some extent, why ignore thermal cycles?

## 6.7 Newton's bucket and the Ernst Mach question

# 7 THEMES of Brett Holverstott

As with Randell Mills' themes, rather than write up a [complete, coherent] commentary, I have merely listed a few [random, scattered] comments that I wrote while I was reading the book. These are a repeat of the chapter-by-chapter detailed commentary at the end of this review.

Clearly there are Holverstott themes, mostly non-Mills concepts, that I disagree strongly with, as can be seen from the detailed comments. But on any of the disagreements, I am sure that Holverstott presents a far more [acceptable, conventional] point of view than I.

Scientists' personal attacks against the Heretics, Failures of Science

List of [antagonist, skeptic] to cautiously interested

p113h0.02 1990 John Philipps Penn State, contracted to BLP then continued collaboration when he move to Los Alamos - plasmas  
 p116h0.6 late 1990's Peter Mark Jansson - visited then did Master of Science at Rowan University on Mills' highT lowP electro-chemistry. p118h0.4 Jansson comments that the "... cold fusion scandal has created a stigma which has made it difficult for the academic community to perform a complete and unbiased analysis ..."  $\ddot{\iota}$  See the section "Howell's references : Back-stabbing by con-scientists" below for a very examples of the ocean of cases outside of the focus of Holverstott's book.

# 8 Shortcomings

## 8.1 Shortcomings of Mills

Frankly, I have not worked with Mills theories, so I cannot provide a good analysis. As I stated elsewhere in this review, right or wrong, Mills is a powerful [thinker, experimentalist, leader], who is a rare example of someone who can stand against legions of believers and still progress on his own merit.

If I have one main criticism, it is that Mills independent streak of thinking has not yet turned on General Relativity. It would be very interesting to see him tackle that.

## 8.2 Shortcomings of Holverstott

Alexander Solzhenitzn's "Goulag Archipelago" spoke of convicts those who knew themselves to be innocent, but didn't suspect that others were as well, still maintaining faith in a system that had betrayed them...

I've already stated Holverstott's very uncommon [talents, strengths] in spite of my sometimes biting criticisms. However, while he has exhibited strong thinking on hydrino-related issues, he does not appear to have done so on his favoured "politically-correct"

themes, including "CO2 as the primary driver of climate since 1850", environmental religions, and naive assumptions that "to think well is to do well". That's OK, we can live with that, and adapt to the damages, as this is normal.

## 9 THEMES on the periphery

Holverstott's book leads into several [interesting, important] themes that are not directly addressed. Here are a few [random, scattered] themes that stood out to me (many others are not listed here - and I've probably forgotten them).

### 9.1 Hydrino regeneration

09Sep2018

Randall Mills is understandably focused on energy GENERATION, as that is a critical first step. But consumer use of very high quality water, might also be an opportunity to use "hydrino packs" and swap those out for regeneration. This is similar to swap-in, auto-scale regenerative battery systems, especially those requiring chemical regeneration (eg zinc-air, or even proposals for Li-ion).

p366h0.0 "... Further, hydrino catalysis is, literally, the permanent removal of hydrogen from the Earth's biosphere. ..."

>> Maybe not - natural sunlight conversion of hydrino to hydrogen over long periods? More exciting - [industrial, home] regeneration, and use of hydrino as an "energy sponge" : eg regenerative braking, nuclear reactor cool-down, etc.

09Sep2018 Grid power and mobile power systems...

### 9.2 Power sponge

Apart from standard processes to [absorb, re-use] cart [waste,excess] energy (including [batteries, capacitors, heat]), there is still a need for large-power regenerative energy systems.

### 9.3 MISSING IN ACTION : Philosophers

p373h0.4,

### 9.4 Fractional Order Calculus, Multi-fractals

Interest in fractional order calculus, while dating back to Leibnitz, only now seems to be surging.

### 9.5 Bill Lucas's Universal Force

### 9.6 Ed Dowdy's Extinction Shift Principal

### 9.7 The SAFIRE plasma sun experimental project

## 10 Reviewer Howell's perspective and quirks

Some of my [perspectives, approaches] are summarised in the note "Lies, Damned Lies, and Scientists : A Summary". Components of that are repeated below.

## 10.1 The Dark Side of Science, and my Principle of Generality

American geologist stated that :

"... All theories are wrong, but some are useful. ..."

Howell's addition :

"... The most prominent of scientific theories spawn excitement and a chain reaction of generations of creative and powerful advances in science. But as they pass through the stages of "science fashion ->cult ->religion", they also create entire classes of disciples of the religion, true believers. Ultimately, no longer able to see reality except as filtered through their conceptual straightjacket, these aggressive and blind defenders of the faith visiciously defend it against any heretics, quashing the extremely rare individuals who are out only hope of breaking past the inherent flaws, limitations, constraints] of the scientific religion, and delaying further scientific advances in that area for [decades, centuries, millenia]. ..."

This is NOT like Thomas Khune's description of paradigms. To me, he missed the boat almost entirely, failing to see who we really are, how we really think.

...copy text from Lies...

When science is stuck in a morass, it is the dark side and Principle

Howell "... A scientist's thinking is MOSTLY a result of the intellectual programming that he has received, and his devotion to beliefs arising from the programming. MOST of the changes in his thinking result from shifts in his peer directions, with minor contributions arising as a result of his own work, but only insofar as that doesn't violate the intellectual programming. ..."

I'm sure that everyone (not the least me) disagrees with that statement, but what I like to believe, and what I see scarcely overlap.

## 10.2 The Bright Side of Science, and my Principle of Locality

While my review may give the impression that I am [dark, brooding, grinch-like], that is a smaller part of me. Science was not only a focus of my career (non-scientist in scientific and engineering organisations), but has long been one of only two real vacations that I have taken : visit family; attend a neural network conference per year. I enjoy science and scientists, and very few people appreciate crazy ideas as much as I do. With a "multiple conflicting hypothesis" (MCH) attitude, these are not a threat to me, and I don't become a tool of a theory.

...copy text from Lies...

I feel that the Bright Side of Science dominates, both in terms of the volume of scientific work and scientists intentions and efforts. You should expect that, as the vast majority of scientific work is well within the realm of the Principle of Locality.

## 10.3 "Multiple Conflicting Hypothesis" (MCH)

A good question is worth a thousand good answers.

A good experimentalist is worth a thousand good theoreticians?

## 11 Howell's glossary

axiomatic - Newton's approach as taken from Lucas : eg [complete, coherent, phenomenological, ???]

creative, breakthrough thinkers grounded in reality

essentially all  
exceptions are <1 in 10,000 (loosely)

Principle of Generality

## Principle of Locality

multiple conflicting hypothesis (MCH)

strong thinkers

I do NOT see [creative, breakthrough, strong, turbic] thinking as a property of an individual, rather an observation that for a given theme (especially when within the expertise of an individual), what are the relative portions of scientists who fall into the respective categories. It is my experience that a strong thinker who can see for themselves (eg, not just an intellectual robot following everyone else) the failing, limitations, constraints] of a scientific religion

turbic thinking (versus turbid thinking)

screamingly [dishonest, dysfunctional, delinquent, hypocritical, backstabbing, cowardly, parasitic] thinking and behaviours

## 12 Howell's references

The list of references below is woefully short and incomplete - in essence it is a [rare, random, scattered] sub-sampling. Most of the non-mainstream authors will have been trashed by the mainstream, which is the exception rather than the rule in science. As I've stated elsewhere, this is standard treatment by the mainstream against truly great scientists, and the lack thereof really casts doubt on achievements other than within the Principal of Locality. Of course, that doesn't mean that all who are trashed are great, far from it. But trashing the non-great is often a reflection of the nature of the self-annointed disciplinarians.

### 12.1 The Bright Side of thoughtful concepts in a framework of Multiple Conflicting Hypothesis (MCH)

There are an absolutely HUGE number of concepts out there! Unlike most others, I am not overly concerned with whether a theory is [right, wrong, true, false], as a [rule of thumb, standard assumption] they are all wrong, and the great scientific religions ultimately become our greatest impediment to progress. However, in practise they can be very useful.

Brett Holverstott 2016 "Randell Mills and the search for hydrino energy" KRP History publisher, 437pp, ISBN: 978-0-692-76005-5 [www.BrettHolverstoot.com](http://www.BrettHolverstoot.com) *ii* This is the book that has been reviewed in this report.

Edward Dowdye 2001 "Discourses mathematical illustrations pertaining to the Extinction Shift Principle under the electrodynamics of Galilean transformations" copyright 1992, printed by Ed Dowdye, Second edition 2001, ISBN 0-9634471-5-7 *ii* General Relativity clearly fails to model the bending of light from [planets, stars] by the sun. By the way - a steady sequence of historical frauds are associated with GR and the Eddington proclamation. Refraction through a plasma atmosphere is a working concept. *ii* The Extinction Light Principle directly describes effective mass in a classical manner, but is currently untestable.

?Hoholzen? arrived at only one constant for sub-atomics based on a fractal (Zierenpiensky?) approach

EU2018 guy - chemical structures

William J. Hooper 1974 "New Horizons In Electric, Magnetic Gravitational Field Theory" Electrodynamic Gravity Inc, 543 Broad Blvd, Cuyahoga Falls, OH 44221 <http://www.rexresearch.com/hooper/horizon.htm> *ii* Hooper claims that there are 3 types of electric fields : [electrostatic, induced by motion in a magnetic field, changing Magnetic field strength], and 3 types of magnetic fields. Faraday shielding doesn't apply to ?static fields?.

Charles W. Lucas Jr, Joseph C. Lucas 2002 "A physical model for atoms and nuclei Part 1,2,3,4" Foundations of Science: vol5n1 pp1-7 (2002); vol5n2 (2002); vol6n1 (2003); vol6n3 (2003) [www.commonssensescience.org](http://www.commonssensescience.org)

Charles William Lucas 2013 "The universal force : Volume 1 - Derived from a more perfect union of the axiomatic and empirical scientific methods" [www.commonssensescience.org](http://www.commonssensescience.org) ISBN-13: 978-1482328943, ISBN-10: 1482328941 *ii* This is BY FAR, the [broadest, deepest] theory of physics that I am aware of. I am doing a step-by-step re-derivation of results in the book, which is taking me way too long!! Currently I am programming a text system for change-overs in symbols and nomenclature, to force better [clarity, consistency, audit-ability, prove-ability]. +——+ *ii* Lucas acknowledges : This book is dedicated to all lovers of truth and especially the following :

Euclid and the ancient Greeks that developed geometry and the axiomatic method to "Prove" or derive theories of natural philosophy in a systematic and logical way.



Sir Isaac Newton who developed the empirical scientific method to measure and mathematically define the minimal set of force equations to explain nature.

James Clerk Maxwell who showed how to combine four of the six empirical laws of electrodynamics to develop his wave equations for electrodynamics which allowed the separate electric and magnetic force laws to be combined into a single electrodynamic force. He explained the wave nature of light which became the foundation of optics. He followed Michael Faraday and Andre-Marie Ampere in emphasizing the role of fields in extending their electrodynamic force to great distances to replace Weber's action-at-a-distance electrodynamic force.

Thomas L. Barnes, professor of Physics at the University of Texas at El Paso, who showed the way to eliminate Einstein's Special Relativity Theory from electrodynamics by taking into account the electrical feedback effects on finite-sized charged particles.

Andre Koch Torres Assiz, professor of physics at the University of Campinas - UNICAMP in Brazil, who showed the way to explain gravity as a fourth order electrodynamic effect between vibrating neutral electric dipoles using Weber's electrodynamic force.

Alice Pittard Lucas my faithful and loving wife who encouraged and supported my research that resulted in this series of books.  
+—+

John David Jackson 1999 "Classical Electrodynamics, 3rd Edition" John Wiley Sons, 808pp, ISBN 978-0-471-30932-1  $\checkmark\checkmark$  Standard textbook, very well written.

Oleg D. Jefimenko 2000 "Causality Electromagnetic induction and gravitation : a different approach to the theory of electromagnetic and gravitational fields", 2nd edition, Electret Scientific Company, Star City, 210pp ISBN 0-917406-23-0  $\checkmark\checkmark$  This is beautiful!! Nice to see dimensional analysis back again.

## 12.2 Quantum Mechanics is a fools paradise

de Broglie 1924 statement

Max Planck 1901 paper

Editors Dean Turner, Richard Hazlett 1979 "The Einstein Myth and the Ives Papers: A counter-revolution in physics" House, Pasadena CA USA, 110+313pp  $\checkmark\checkmark$  Includes the Ives-Stilwell atomic clock experiment as analysed by Ives. He DISAGREED with special relativity, as did Michaelson. However, Ives did see the original relativity by Lorenz-Poincare as being correct.  $\checkmark\checkmark$  This is an hilarious example of the "deification" of a scientific concept, and its mis-application to another field. It's kind of Al Gore-like.

F.J. Tipler 26Oct08 "The Obama-Tribe 'Curvature of Constitutional Space' Paper is Crackpot Physics" Dept of Mathematics Dept of Physics, Tulane University, New Orleans <http://ssrn.com/abstract=1271310>

Alexander Unzicker 2013 "The Higgs fake: How particle physicists fooled the Nobel Committee", 152pp ISBN 1492176249 ISBN-13 978-1492176244

## 12.3 General Relativity is a turkey

Tom Bessel - problems with GR

Steven Crothers

G. O. Mueller and Karl Kneckebradt 0605dd "95 Years of Criticism of the Special Theory of Relativity (1908-2003)" The G. O. Mueller Research Project [GOM-Project Relativity] May 2006 edition <http://www.gsjournal.net/old/science/mueller.pdf>

## 12.4 Mythology sometimes leads science, amateurs often beat the best mainstream scientists

The SAFIRE plasma sun experimental project, strictly scientific in nature, has its origins from the Thunderbolts group - a marriage of mythology and science. See the section below for references to SAFIRE.

Wallace Thornhill, David Talbot 2002 "Thunderbolts of the Gods" Mikamar Publishing, Portland OR 2007 edition 122pp

Immanuel Velikovsky 1950 "World in Collision" Paradigma Ltd edition 2009, original Doubleday Co., New York, 426pp ISBN 978-1-906833-11-4  $\ddot{\iota}$  Scientists hated this best-seller, and did everything to [censor, shut-down] its publication, and to erase the aftermath. Velikovsky had wild ideas - and the scorecard shows that he was right and all of science was wrong most of the time. It's not hard to imagine that most scientists (and many of his current-day followers) have a hard time imagining Venus sprouting from Jupiter (or Saturn - now I forget) in historical times!

## 12.5 SAFIRE plasma sun - experiments [before, beyond, ] theories

Will these guys drive nuclear fusion power [science, technology, commercialisation], blowing away all others, and perhaps sooner rather than later? This is a long shot, but already they have sensible and impressive results on a micro-budget, under the leadership of Torontonians ??? Paul? Mainwaring (careful - I have suspicions that they may be Toronto Maple Leaf fans), and the Thunderbolts group (David Talbot, Wal Thornhill and many others). At the very least, on an extremely low budget, they have already blasted past mainstream science on many key points. Hail to the experimentalists!

As stated in the 2017-2018 SAFIRE project report : "... Some of the most illustrious explorers in the history of the sciences have long proposed that electricity plays a much more important role in the heavens than has been acknowledged – Benjamin Franklin, Michael Faraday, James Clerk Maxwell, Sir William Crookes, Kristian Birkeland, Nicola Tesla, Irving Langmuir, Hannes Alfvén, to name only a few. ..."

<https://safireproject.com/ewExternalFiles/SAFIRE-Project-Report.pdf>

<https://www.youtube.com/watch?v=DeVdzSjPx0g> The SAFIRE Project - 2017-2018 / [www.safireproject.com](http://www.safireproject.com) "Star in a jar" 01:25:38 into the video : "... Shortly after the 2017 Phoenix conference, the SAFIRE team discovered a unique process that initiates and sustains the plasma double layers. This was a major discovery, because it is these plasma double layers that produce both the extraordinarily high energy densities and the electric field that contains these energies within the plasma. This new advancement in plasma science demonstrates a process that consistently creates, contains, and controls the plasma double layers in stable exothermic plasma reactions. Although the energies and densities are comparable to the sun's photosphere and nuclear bombs, the data shows no harmful side effects such as radioactivity. But the science of what is actually happening at the molecular and atomic levels is not yet fully understood. Understanding these reactions will give valuable insight into the way the sun's atmosphere functions and provide the foundation by which these energies can be beneficially harnessed. This research will be the top priority of 2018. ..."

<http://www.suspicious0bservers.org/dl/march-4-2018/> (You must be a member to access the video) Michael Clarage comments at Suspicious Observers' "Observing the Frontier 2018" conference - extrapolate SAFIRE by 24 orders of magnitude to Sun - to within 2 orders of magnitude!! (awesome, just a primitive back-of-the-envelope)

<https://safireproject.com/project/presentation.html> THE SAFIRE PROJECT at the ELECTRIC UNIVERSE – UNITED KINGDOM INTERNATIONAL CONFERENCE SYMPOSIUM 7th - 11th July 2018, Somerset, UK

1. "Collaboration and Science" - Montgomery Childs explores the idea of 'two worlds', the theoretical and the empirical, and how the SAFIRE PROJECT maintains a sharp eye on the line between. He also offers an intriguing take on SAFIRE methodology – involving a cigar, sailing, and a bit of wind. - experiment (empirical) as key, theory as aid - elemental changes in the chamber - no forcing of plasma behaviour : "natural" - copious amount of fusion? from H<sub>2</sub> -  $\dot{\iota}$  H + D mix, mass spec shows other [elements, compounds] (to A of  $\dot{\iota}$ 63?)  $\ddot{\iota}$  Some quotes from the video : - "... Experimentalists are the gate keepers, they hold the keys to progress in the applied sciences and technological advancement. ..." - "... The two worlds (experiments, deductive theories) need to be brought together. There must be a collaboration for technological advancement to be realized. ..."  $\ddot{\iota}$  I question this - one does NOT need theory most of the time! Pure data-driven models work alone, whereas theory without any experimental basis rarely works. Both [experiment, theory] must iterate over ever more diverse experimental results.

2. "New views on the interstellar medium" - Dr. Michael Clarage talks about his work with SAFIRE from a more philosophical perspective – what an empiricist might ponder outside the lab. He offers some intriguing if not startling observations about the astronomical and the biological, the dead and the living universe. - clear demarcation between theoretical and empirical - lasting impacts from data - much new astronomical data violates existing theories - need new [theories, models] for astronomy - very exciting time for astronomy - dark matter and black holes headed for dust bin - biology and plasma astronomy very similar, same basis? - astronomy is alive, like you and I - [directed, managed, purposeful] molecule movement in cells = new views of astronomy, connected [stars, galaxies, clusters, etc], structure and function - more data won't necessarily help unless we ask the right questions - biology recognizes form follows function, not astronomy - stars as "alive"?

3. "SAFIRE project 2018 report" - Montgomery Childs and Dr. Michael Clarage present a review of The SAFIRE PROJECT to date, which includes some new discoveries of the past year. Childs : - plasma regimes (low -  $\dot{\iota}$  high current) : dark quies-

cent, tufts, moving tufts, fouble layers, quiescent, assymetric - gravity no effect in chamber - enormous energy storage in plasma layers even though 182 W power input - destructive energy release vaporizes tungsten, melts ceramic - high voltage gradients in vacuum conditions in plasma ( $\lambda = 8,000$  V/m) Clarage : - [voltage, current, resistance, power, fields, electron densities, temperature] across plasma double layers very interesting, much unknown - plasma adjusts itself over enormous ranges, very stable - increasing temperature away from anode is like sun's corona (81,000 Celsius) - is "temperature" a poorly suited concept for the plasmas - nuclear fusion model does only ONE thing well - predict solar power output  $\lambda\lambda$  Howell - not really, as they simply adjust parameters to get the output. May be best so far - plasma electric model based on SAFIRE is out by factor of 100 after scale-up by  $10^{24}$  (*predicts smaller sun than actual*)  $\gg$  *Howell - still very early in experiments, simple correction to huge scale - up would easily handle (as with nuclear model!) - nuclear fusion model does NOT predict [sunspots, coronal loops, relative abundances of elements]* *nuclear fusion model does NOT predict existence of [photosphere, chromosphere, corona]* Summary of results to date by Childs : - *SAFIRE - capable to [contain, control, stabilize] high energy dense plasmas - chemistry changes - slowing the speed of light (UV upto 60 eV)* *variations in the electron density comparable to [photosphere, heliosphere, nuclear bombs]* - *plasma double irradiance comparable to their electrical confinement of high energy photons (photon trapping)* - *The core of SAFIRE is cooler than its surroundings (like sun; photosphere)* *Lowell Morgan predicts cathodes may not be required after plasma set up - fed from plasma itself*

2017 Electric Universe FUTURE SCIENCE Conference in Phoenix Arizona 4. 90 minute SAFIRE PROJECT presentation, given at the 2017 Electric Universe FUTURE SCIENCE Conference in Phoenix Arizona.

## 12.6 Back-stabbing by con-scientists

I love crazy ideas far more than most for a number of solid reasons. I think that where science becomes "evil" is when a theory passes from fashion-to-cult-to-religion, and represses the heretics. But that is standard practice - the examples below reflect the norm of behaviour by [scientists, institutions, funding agencies, policy groups]. More often than not, the back-stabbers do an [admirable, inspiring, complete] job of showing how stupid they are (i.e the "core" of turbic thinking) in their own field of expertise.

Halton Arp story

Charles Ginenthal 1990 "Carl Sagan and Immanuel Velikovsky" Ivy Press Books, New York 359pp  $\lambda\lambda$  A well documented case of classical academic backstabbing involving the American Association for the Advancement of Science, Stephen J. Gould, Carl Sagan, Isaac Asimov, and an army of others. Dumb, dumb, dumb back-stabbers!!  $\lambda\lambda$  The same "kangaroo court approach was used by the AAAS against Robert Schoch, who as a geologists dared claim the Great Sphinx was much greater than 6,000 years old. I have no idea of how many others were trashed like this.

Howell - Lies, damned lies and scientists (I and III)

?Shapely's trashing of Kristian Birkeland?

Immanuel Velikovsky 1982 "Mankind in Amnesia" Paradigma Ltd edition 2010, original Doubleday Co., New York, 186pp ISBN 978-1-906833-??-?  $\lambda\lambda$  This book is Velikovsky's attempt to explain the blindness of scientists with respect to his own work.

Velikovsky's daughter's book

## 13 DETAILED COMMENTARY for each chapter

### 13.1 Chapter 1: Fire of the Gods, p1

12Jun2018 p4h0.5 "... Somehow, his <Semmelweis> ideas were communicated poorly, misunderstood, and in the eyes of his peers, quickly debunked. ..."

$\gg$ ..Emphatic NO! The problem is that highly trained [intellectuals, professionals] are basically ?adjective?!

added 09Sep2018  $\gg$ ..More precisely in Howell's terms: limited to thinking within the "Principle of Locality", and cognitively unable to think according to the "Principle of Generality". The [modern, politically-correct] mantra is that one must be an effective communicator in order to persuade other people, and I certainly agree with that. But that is a side-effect of "turbic thinking", and the [strong, breakthrough] thinkers shouldn't have to communicate to the rabble. A far better solution is to do something [with, about] that, such that the rare "strong thinkers" ( $<1 : 10,000$ ) and the extremely rare "breakthrough thinkers" ( $<1 : 1,000,000$ ) aren't [tied up, put down, stymied] by essentially all [government, academic] scientists ( $>9,999 : 10:000$ ). Randell Mills found ways to avoid that, a bit like having the favour of the royalty, but a very sharp modern business-science royalty. His supporters are likely strong thinkers as well.

12Jul2018 p16h0.6 "... We may find that in our pursuit of science, we carry with us the baggage that is human nature, with its hopes and dreams, biases and frailties, and bursts of genius that push us forward to a better future. ..."

>>\_Ahmen.

### 13.2 Chapter 2: A farmer's son, p17

.. I did not write notes for this Chapter - that is not a reflection of the Chapter, but of my haste and focus.

### 13.3 Chapter 3: Unobservable magnitude, p27

13Jul2018 p29h0.2 "... The history of science may well be written as a history of great experimental apparatus. ..."

>>\_YES! I so agree! Unfortunately, modern [instrumentation, experimental] scientists have often become the slaves of theorist ?adjective?.

13Jul2018 p35h0.5 "... In the tradition of the model builders, a model did not need to be perfect, just illustrative, and one could ignore the defects until someone had a better idea. ..."

>>\_Good point - except these become religions. Chapter 7: Greater than fire

### 13.4 Chapter 4 : The Hydrino, p49

16Jul2018 \*\*\*p63h0.4 (last page or two) Holverstott discusses <the electron structure) as if it is composed of circulating sub-electrons, even though Holverstott warns against this. Why? Why not a single entity as stated : EM, waves. This sounds like Bill Lucas's [electron, proton, "neutrons don't exist - nuclear electron-proton complex]] soliton structure, but is cool different.

>>\_11Sep2018 This strange confusion between an electron as an entity, but a description in terms of sub-components had also struck me with Lucas's work.

>>\_11Sep2018 Spherical shell membranes are stable when surface forces counteract internal pressures (balloon). Surface [crusts, shell] are spherical when underlying solids are formed that way, or when gravitational forces impose a planetary sphere (creep adjustment).

\*\*\* 16Jul2018 p68 Fig "Hydrino states of the hydrogen atom"

>>\_Incomplete? Maybe free electron (shown p103) ->[atomic, molecular] shells ->nuclear (neutron as i.e. neutron as [electron-proton] weak bonding (Bill Lucas "Common Sense Science" ?date? based on recent NIST data, neutron does NOT qualify as a fundamental particle)

>>\_15Sep2018 Holverstott does allude to some Mills' thinking along this line, but Mills does not "close the loop" between H(1/137) and neutron?

### 13.5 Chapter 5 : Cold Shoulder, p71

?15Jul2018? p83h0.0 change to "... Mills found an early collaborator ..."

### 13.6 Chapter 6 : Electron Olympian, 95

15Jul2018 p100h0.6 "... If two electron beams collide, they repel and scatter. But surely the current inside the electron isn't made up of even tinier electrons! ..."

>>\_But author Holverstott IS thinking in terms of tiny sub-electron particles. Should be ?waves or something? to describe [behaviour, characteristics]?

15Jul2018 p102h0.4 "... If we take our galaxy and make it the size of a penny, this thickness would correspond roughly to that of a penny in that shrunken galaxy. ..."

>>\_Clumsy, a bit - funny.

## 13.7 Chapter 7 : Greater than Fire, p111

02Dec2018 Howell - more notes :

aqueous electro-chemistry, gas phase, plasma, catalysis

List of [antagonist, skeptic] to cautiously interested

p113h0.02 1990 John Philipps Penn State, contracted to BLP then continued collaboration when he move to Los Alamos - plasmas  
 p116h0.6 late 1990's Peter Mark Jansson - visited then did Master of Science at Rowan University on Mills' highT lowP electro-chemistry. p118h0.4 Jansson comments that the "... cold fusion scandal has created a stigma which has made it difficult for the academic community to perform a complete and unbiased analysis ..."

?15Jul2018? p112h0.5 "... the Institute for Low-Temperature Plasma Physics (INP) at the Moritz ..."

>>\_show the acronym at first use.

## 13.8 Chapter 8 : Spheres, Ellipsoids, and the Void, p137

16Jul2018 p140h0.55 "... We want clear physical reasoning at every step of our process, not rules justified only by the results they obtain. ..."

>>\_Earlier in the book, author Hoverstott points out this kind of problem related to Mach, Bohr, De-Broglie, Einstein. (?materialists?, ?experimentalists?, etc)

16Jul2018 p151h0.85 "... but semi-empirical techniques are not completely useless. If you want to make a guess at the heat of formation of an unknown molecule, looking at many other molecules and incorporating the experimental data for structure and energies will allow you to do so. However, this will in no way constitute a defense of your theory, even if through the agonizing process of recursive manipulations of many variables you get, in fact, a perfect guess. ..."

>>\_... Howell's long-time (?2012?) saying : "small-world universal function approximators" do NOT validate a theory.

>>\_15Sep2018 Sort-of-Wrong, as a general statement. Author Holverstott seems to have the ?mistaken? belief that deductive reasoning from a theory provides a proof. It MAY provide a mathematical proof, but even that is not likely. Or, more to the point :  
 1) it is almost impossible to prove that the [framework, assumptions] underlying the math are truth. These are usually quite questionable at some depth.

2) Godel's theorem's of provability (I think Holverstott addresses them at some point in the book), should never be ignored (they are relevant here)

3) Pretending that a deductive approach alone is a proof is ridiculous. Much more important is experimental support, and even more important are experiments designed to DISPROVE theories. Funny how those aren't \$upported.

4) Even a combination of [theoretical-deductive, inductive-experimental] proofs for all components of a system is NOT a proof for modestly complex systems.

... Face - the words "proof" and "truth" are of much more important to scams than to. proofs. It is far more pragmatic (and "true" if you like that term) to assume that ALL theories are wrong, they all can be improved if not destroyed, and the greatest theoretical successes will be our greatest impediment to progress, as they have passed from science fashion->cult->religion.

16Jul2018 p153h0.4 "... Benson was looking for a quick way of estimating heats of formation ... By surveying heats of formation of thousands of molecules, he was able to systematically distill the energy associated with each bond between functional group types. ..."

>>\_This is like protein ?domains? and overall protein structure and functionality (eg enzymatic properties) in biochemistry (spirals, sheets, etc)

>>\_18Sep2018 another example of where data-driven approaches work without (or almost without) a theory. Vladimir Vapnik, "father" of statistical learning theory : "Engineers and scientists, at some point you must abandon your [theories, models] as they will all fail. You are then forced to go with data-based methods. ..." (approximate quote from a Plenary talk in ?IJCNN 2003 Portland Oregon, USA?.

16Jul2018 p154h0.2 Figure "H3+ molecule : Mills theory describes H3+ molecular bonds as a prolate spheroidal surface of charge completely surrounding the nuclei. ..."

>>\_Holverstott describes as ellipsoids, BUT :

1) planar internal surfaces

2) a bit distorted?

ALSO - Netflix series "History of Maths" and "The Code" (name of narrator/author?, links) shows soap bubble guy and beautiful results.

Holverstott's architecture : should keep in mind:

molecular scale : electric forces >gravity \* 10<sup>39</sup>, surface forces in between

human : scale gravity >>\_neutral (grounded) electric fields

(I think he mentions this in the book somewhere)

examples of architecture :

vertical planar sheets ->walls

domed roofs ->semi-circular or ellipsoidal

tennis tents

16Jul2018 p158h0.8 "... There were exceptions to this rule: occasionally bonds would interact beyond one or two functional groups away, such as in the case of conjugated bonds or aromatic bonds, but these cases could be uniquely described. ..."

>>\_Ahh! Great point!

>>\_18Sep2018 With these simple examples, I am more than ever convinced that quantum mechanics is "a fool's paradise".

16Jul2018 p164 "... But I think the problem is more complex; living beings exist in a complex environment, often a social one, and there are behaviours that some call emergent properties of a being: those can only be understood as a kind of collection action of an organism or group. ..."

>>\_Interesting philosophical grasping

>>\_19Sep2018 Using simple abstractions like reductionism and emergence belies a far greater complexity (and structure, if you like that) of what is likely happening. Two examples :

- MindCode : coding for brain, behaviour, and its implications. Biochemistry is an inadequate context, "Nature versus Nurture" is a junk debate (most of the crap comes from the Nurture side, even if that is important, it's political correctness likely drags in the extremists).

- Huge difference between dead and living systems, even apart from complexity. Many key "rules of the game", etc are quite different.

- Most scientists are close to zero with complexity (me too)

### 13.9 Chapter 9: South of the South Pole, p167

16Jul2018 p171 "... Mills was especially gifted at Fourier math, which gave Zimmerman no end of grief to follow. ..."

>>\_David Thompson, Canada Research Chair in Solar Physics and Statistics circa ?2002?, is an expert on Fourier analysis. In response to my question of why he wasn't using wavelet transform analysis, he replied (approximately) "... we're still learning, after ~180 years, how to do Fourier analysis properly. Wavelet transforms throw in many knobs and whistles, and I'm old ..."

16Jul2018 p172 "... A new scientific theory ought to be engaged by the scientific community. Experiment by many parties should confirm or dis-confirm predictions, as a pathway to acceptance or rejection of the theory. There must be intellectual engagement. ..."

>>\_Clearly this does NOT happen for "general" context, just for "local" context that is conformant to science fashions ->cults ->religions.

>>\_19 Sep2018 see "Lies, Damned Lies, and Scientists" (?link?). Essentially ALL [government, academic] scientists fail in a "general", those that succeed do so IN SPITE of being [government, academic] scientists.

>>\_19 Sep2018 There should NOT be an "acceptance or rejection" of a theory, except for the simplest systems. This is a BIG mistake, as one can always "prove truth or falsehood" with some argument or another. In the context of "small-world universal function approximators", there is no real support for a theory - just a proof that data can be fitted. To me, "Multiple Conflicting Hypothesis" (MCH) is the way to go. But that won't work for most others - they haven't spent their lives pulling their feet out of their mouths.

16Jul2018 p182 "... Until there is a scientific process, not simply a judicial one, the next great discovery may face similar barriers. ..."

>>\_NO! Science and scientists are THE PROBLEM, not the judiciary!

>>\_19Sep2018 WRONG on all accounts!!

- THROUGHOUT SCIENCE HISTORY (<<300BC), this is the RULE, not the exception, and that across all areas of science.

- Essentially all [government, academic] scientists are disciples of great science religions.

- This should be taken as a given - extended education at the highest levels, great science career achievements, and Nobel prizes have totally failed to rectify this.

- I don't take this as a property of individuals, more like an evolutionary, cognitive limitation that we all have.

- My personal practice of "Multiple Conflicting Hypothesis" (MCH) is a band-aid to reduce problems like this in my thinking.

16Jul2018 p182h0.25 "... Wikipedia is another example. I deeply support a free and open forum for the sharing of knowledge, functioning on the same principle as that of the wider scientific community: knowledge by consensus, the truth of many. But in cases of polarized controversy, we still have some work to do. ..."

>>\_NO!!! FREEDOM OF THOUGHT.

>>\_19Sep2018 Wikipedia is HUGELY biased - just ask any scientist who has attempted to post strong criticisms of the [overwhelming, politically-correct, mainstream] science religions. On many topics I have to use different search engines, and Google is no longer my default search engine because of the same issue.

>>\_19Sep2019 consensus is ANTI-SCIENCE!!! It's yet another major failing of Western thinking, and a major driver of garbage science. The strength of widespread involvement is the diversity, tough debates, and co-existence, not uniformity.

>>\_19Sep2018 I donate a very small amount of \$ each year to the Wikipedia campaign. This is another key failure of the CANCER of modern democracy - don't judge people by their yap, only by where people voluntarily put their extra pocket money.

16Jul2018 p185 "... "... Perhaps we will see another kind of online encyclopedia for original research, in which detailed review articles emerge spontaneously from the small contributions of individuals. Perhaps we will see scientific papers organise like threads in a talk forum. ..."

>>\_What do you want? (Howell's stupid comment: ) Extreme science corrections in history often involved torture, then elimination : Roman takeover of Greek Science, Lenin & Joseph Stalin, Hitler, etc etc. In much more civil manner : F.D. Roosevelt in the 1930's, L.B. Johnson in the 1960s, Canada in 2000's etc etc.

>>\_19Sep2018 My stupid comments aside, for two decades far more [general, powerful, innovative] publishing eco-systems have emerged than what you envision, largely thanks to internet-based [communities, publishing channels]. I doubt that they will survive eventual censorship by official scientific religions.

>>\_19Sep2019 Holverstott misses the most important aspect of open publishing : the rare gifted amateurs, who dominate breakthrough thinking in many areas of science (later, of course, credit goes to [government, academic scientists] who attacked them for the stolen ideas), and who are the ONLY real bulwark against "turbic" thinking of official sciencedom.

### 13.10 Chapter 10: Semmelweis effect, p187

17Jul2018 p191 "... A perfectly rational scientist would soberly climb the rungs of scientific knowledge, giving no more credit to a theory than was due, always ready for new ideas to come along with greater explanatory power, always willing to absorb the necessary concepts with patience. ..."

>>\_YES!!

>>\_19Sep2018 Of course, essentially NO [government, academic scientist can do that, and those that do, do so IN SPITE of being scientists, not because they are scientists.

>>\_19Sep2018 rational, logical, scientific] thinking is strongly limited and constrained, and I doubt any more than a handful of scientists worldwide understand that. I really doubt philosophers too. Computational Intelligence goes where Artificial Intelligence cannot BECAUSE it emphasizes largely [non-[logical, rational, scientific] modes of thinking, albeit those are the larger part of any substantial system using CI, and CI itself also applies those tools.

17Jul2018 p192 "If we try to build theories on disconfirming evidence, we have a rather hard time doing so, especially in a new area of study [Twseny 1981]. Perhaps that is why we are cognitively designed to pay less attention to disconfirming cases. ..."

>>\_exponential explosion of models

>>\_19Sep2018 Science as a collection of religions is a far more general, powerful explanation.

>>\_19Sep2018 "Multiple Conflicting Hypothesis" (MCH) is limited - pragmatically, it's hard enough to do one [concept, theory, model] thoroughly, and often the pragmatic limit is two or three (1, 2, infinity).

17Jul2018 p192h0.9 "... Then, an observation by Sir Arthur Eddington did confirm the theory. When a student later asked Einstein what he would have done if the results turned out negative, he said "Then too bad for the observations; my theory is right anyway." ..."

>>\_Hah! sounds like Einstein and essentially all disciples. I hadn't heard this quote before.

17Jul2018 p193h0.6 "... And so, perhaps, those most susceptible to resisting new ideas are those at the top of their profession, those incumbents of knowledge, who ascended from past achievements, perhaps even those innovators who established the current paradigm of thought. ..."

>>\_YES! the most deeply [religious, abusive] are the experts.

17Jul2018 p193h0.8 "... the revolutions of 1848, partially driven by student uprisings. When the students formed themselves into a corps called the Academic Legion, Semmelweis proudly wore the uniform in his duties, which must have angered Klein. ..."

>>\_This was a few years BEFORE Semmelweis's term at the hospital?

17Jul2018 p194h0.6 "... Regardless, without Semmelweis managing the ward, cases of fever again spiked. About Klein we may only say that some men are willing to allow any horror so long as they don't have to face a new reality with eyes open. ..."

>>\_Yes!

17Jul2018 p195h0.5 "... We do better in groups, in scientific communities where good ideas can be slowly distilled from the bad,

where many researchers with different backgrounds perform experiments and theorize, and then come together to share knowledge and argue over the best explanation. ..."

>>\_NO! keep the silos [separate, diverse], especially the ones you don't like

>>\_23Sep2018 The Western mantra of "group [think, decisions]" is a useful tool. But the cancers of [consensus, conclusions-driven. theory before reality, etc, etc] science have hugely detrimental side-effects, and succeed in killing "general" as opposed to "local" thinking (i.e. subject to the huge limitations and constraints of consensus theory-religions). Science should take a hint from long-past politics : "I don't agree with what you are saying, but I will defend to the end your right to say it". However, politics, especially modern Western trends of the left, have also changed and ignore that lesson. (I am both [left, right, anywhere], so I make that statement as an observation, not as an allegiance).

17Jul2018 p196h0.25 "... He could be very compassionate to students, even those who were struggling. ..."

>>\_Another emerging problems? Kids can't afford university, and programs are becoming day-care centers for engineering students. Opportunities lost for the talented and motivated?

17Jul2018 197h0.2 "... Alfred Wegener (I keep spelling his name incorrectly)

>>\_23Sep2018 Wegener did NOT invent the concept of Continental Drift - that had been long-proposed before Wegener. Wegener was important in digging out 4 main support pillars [fit of continents (partially), [paleontological distributions of species, geological distribution of mountain ranges and deposits,?climate as 4th?] across now-separated continents. But he was unsuccessful in getting acceptance for Drift - that was the US Navy (funny how important, and never-mentioned, they are) with [mid-oceanic ridges, spreading], plus a few well-funded scientists, for the slightly-larger (still inadequate) concept of Plate Tectonics (PT).

>>\_23Sep2018 Holverstott fails in his description of the "Continental Drift" history, by stopping short. This is "yet another concept crushing" (yacc - stealing from Unix terminology) recursion example, where the good guys become bad guys who yacc new good guys. There are many well-supported failures of Plate Tectonics (PT). One of a jillion alternative concepts is the "[Expanding, Growing] Earth" (EE) group of concepts which are crushed by essentially all modern scientists. This is hilarious, as PT is ENTIRELY a sub-set of EE (albeit many of the disciples of Expanding Earth don't agree with that), but PT is far more general and powerful, and fits much more known data FAR better :

- ALL continents fit together extremely well, with minor bending and little rotation, on an EE of ~1/2 diameter (I've done this myself with globes and continent traces - easy to do!). In other words, PT is arbitrary and dishonest about how it selects which continents to fit together at which time, and how it has to ignore probably 20-30% of the data to work.

- Continental Drift [geology, species, climate] data and PT sea-floor spreading all are excellent support for EE. But whereas EE works with modern data, PT does not.

- Plate Tectonic vectors on the continents (maps available every few years or so) are very problematic.

- Modern high-accuracy GPS measures set the expansion of the Earth's Radius to zero, in spite of long-term data saying otherwise. Admittedly, the growth is close to zero, but so were the interferometer results from the Michelson-Morely experiments. On the basis of a [WRONG, later DISPROVEN by Michelson-Gale and others] ASSUMPTION about the data, garbage concepts like [Special, General] Relativity flourished in spite of any results to the contrary. That this occurs is the proof that Universal Function Approximators can fit data in spite of crappy theories (my opinion). Getting back to the Earth's Radius, I lack the effort-in to draw strong conclusions (opinions), but I have ample [effort-in, experience, project] to conclude that EE is superior on this point. But with "Multiple Conflicting Hypothesis" (MCH), both are retained by practice, and it's dishonest to conclude too early.

- By the way, funny how Cherenkov radiation isn't seen as a threat to fundamental physics? Nor [long-establish, way-above-uncertainty] variations of the speed of light in a vacuum, except for modern science - where  $c$  is SET to a constant, damned any measurements! (The product (or division?)  $h*c$  seems closer to a constant, then there is the funny, intriguing fine structure constant etc).

So why are essentially ALL [government, academic] research scientists vehemently opposed to even thinking about EE?

23Sep2018 p198h0.1 "... Bretz took his students on expeditions to the scablands, traversing thousands of miles over rugged terrain to map these features. By his second visit, he had reached a conclusion which appeared, on its face, to be absurd. ..."

>>\_(I did not write down my sarcastic rant regarding [government, academic] research scientists.)

>>\_I've heard of this many times before, but didn't remember Bretz's name.

>>\_23Sep2018 I think the much-hated Velikovsky mentioned it (not sure - but most of the time he was right and ALL [government, academic] scientists were wrong. Maybe the jury's still to be made a fool on the Venus-from ?Jupiter? a few thousand years ago? I doubt it, but that was a [brave, crazy speculation], and Velikovsky's record on reasoned speculation beats any scientist that I know of. His concepts also [beat, outlasted] their science.

>>\_It seems to me that Lewis and Clarke went across this area? (not sure of commentary, my memory fails). Also, an arrow retrieved from deep within metamorphic (lava) formation that is supposedly millions of years old? (again - my memory fails).

17Jul2018 p199h0.95 "... I wonder how many discoveries in the history of science were delayed, either because their discoverers were afraid to speak out, or they were discouraged- or suppressed - by an authority before they could be made known. ..."

>>\_ALL - ideas were thus delayed, many, many destroyed

>>\_23Sep2018 A better explanation, between 17Jul2018 [Holverstott, Howell] is the framework of my Principles of [Generality, Locality] :



- using the acronym Con-Science for [overwhelming, mainstream, politically-correct] scientific fashions-cum-cult-cum religions (eg "Consensus Science", or the "Art of the Con-Scientist")
- Locality hard - discoveries that fit right in with Con-Science do not face this challenge, or face minor resistance, with the rare exception of non-disciples who are easy to bypass by avoidance.
- Locality soft - for discoveries that "tickle the edges" of Con-Science, many if not most discoveries will encounter some degree of resistance and delay, but will probably make it through in time
- Generality Hard - discoveries that "tickle the edges" of Con-Science will invariably be shot down immediately by Con-Science disciples, and must wait [decades, centuries, millenia] to resurface.
- Ergo, any real breakthrough gets its just punishment (stolen from the popular "Any good work deserves it's just punishment", or something like that). Also, beware the expert - find instead someone who can think, and don't worry if they are amateurs starting from scratch with nothing.
- As with [books, news, etc], my first criteria for finding a great work is that it, and its author, are hugely [hated, despised].

17Jul2018 p200h0.3 "... How are we to understand these cases in the history of science? While each is unique, common to them is a fierce prima facie ("on its face") opposition to the new idea, accompanied by an unwillingness to closely examine and weigh the available evidence, followed by a delay of decades before the theory is accepted. ..."

>>\_NO The principal basis is STUPIDITY - especially by the greats!

>>\_Of screamingly [dishonest, dysfunctional, delinquent, hypocritical, backstabbing, cowardly, parasitic] thinking and behaviour, stupidity is the basic root. All homo sapiens are hugely limited, even our best (but perhaps most especially I).

>>\_This repeats itself so frequently, that the conventional explanations just don't work for me. We really do have to understand our limitations MUCH better, even if that makes it hard for big egos to sell their cons.

17Jul2018 p201h0.8 "... However, twenty years later Mills has still not completed his task, despite having told the press repeatedly that he was only a year or two away from a commercially-feasible reactor. This gave skeptics the freedom to sit back and wait, perhaps indefinitely, for the technology to emerge. ..."

>>\_YES!! or funders to fund...!

>>\_Critics aren't important, funding is.

>>\_When I worked as a Commodity Chemicals Market Research manager, it was often said that "... forecasting is a hazardous occupation, especially if you try to apply it to the future. ..." This is also the case for normal project planning (resources and time), even when dealing with mostly-known projects. But software is famous for blowing planned requirements to smithereens, as are large and complex construction and other technical projects. But when you are moving into terra incognita, it is insane to expect sane forecasts - essentially nobody is going to be much good at forecasting - not even the creator of the project. History is full of so many examples, it's a wonder we never learn. Perhaps this is a truism for substantive work and breakthroughs. Perhaps this effect is a manner in which the true [novelty, complexity, importance] can be judged, albeit that doesn't mean most should have been done.

>>\_CuriosityStream.com has a good video on Otto von Diesel's struggles to get the diesel engine to work in spite of all opposition and hatred. This is quite similar to Randell Mills, as well as [electric, solar] powered cars, albeit I find the con-scientist-engineer [stupidity, fraud] in the latter two areas to be over the top. I like crazy ideas, but I don't like [incompetence, dishonesty] which is so prevalent.

17Jul2018 p203h0.75 "... Certainly no academic publisher would touch his book. While at BLP, I submitted it to several important academic publishers, which, in retrospect, was massively naive. ..."

>>\_Just like Immanuel Velikovsky's 1950 bestseller "Worlds in Collision", and so many others.

>>\_26Sep2018 Scientists aren't there for science - just for their own scientific religions.

17Jul2018 p203h0.8 "... When Mills and John Farrell submitted a paper showing how the EUV lines observed in interstellar space match hydrino transitions, Mills included a massive tract of theoretical material to provide background for the claims, but the paper was rejected. ..."

>>\_26Sep2018 What was the date? In 2012 I saw a poster/booth of Bill Lucas's son's project which had won a science fair award on that very subject, based on Lucas's model of the atom, which I think was preceded by ?Bergman or somebody?. I should know, but I forget - this may go back a very long time. Lucas suggests very ancient origins? (Moshu?, but I may be mixing up stories here)

>>\_26Sep2018 I don't believe in anything (which itself is a belief). I suspect that single-individual invention essentially doesn't exist. Rather, [time-dilated, [simultaneous-asynchronous], multiple independent invention is closer to what usually happens. In the [modern, steroid-funded] scientific community, that probably means thousands or tens of thousands of inventors for every idea. The legal concept of first-to-[patent, bribe, lie, propagandize] is meaningless to me, even if it can mean big money for those involved.

17Jul2018 p205h0.2 "... I did not throw Mills book into the trash as I left Wheeler's office, and sometimes I wonder why my instincts led me to continue. By nature, I am a rather independent person, energized by other theories opposing the majority, ambitious in my desire to be creative and successful. I was young and curious, with no reputation at stake, and perhaps better than average insight into human nature. ..."

>>..Awesome statement!

>>..26Sep2018 While I like the explanation, parts are conventional and limited. Contrarianism is well understood in the stock market, not so well elsewhere. But more important, is that on Mills' themes, Wheeler is only a "local" thinker, and fails with "General" thinking. He's actually very good at doing the religion that he is a disciple of, and very, very good at self-promotion and denigration-of-others. But with this theme, and in general, he is a poor thinker, mostly an intellectual robot. (Actually, I haven't followed Wheeler at all - so my comments are pattern-based, not actually Wheeler specific.)

>>..17Jul2018 p205h0.5 What about Newton's bucket?

>>..26Sep2018 ... it's later in the book...

### 13.11 Chapter 11: Blacklight rocket engine, p207

18Jul2018 p209 0.0

>>..Awesome idea!!

>>..27Sep2018 I didn't put any review comments in this chapter when reading it, but it was fascinating.

### 13.12 Chapter 12: Fulcrum of physics, p217

18Jul2018 p222h0.9 "... When classical theorists such as Abraham, Lorentz, and Poincaré (ALP) first began to consider classical models of the electron, they imagined how a (monolithic) spherical shell model would behave in a purely electrodynamic world, and wondered if we could explain Newtonian mechanics only with electrodynamics. ..."

>>..Weber did this ~80 years earlier!!!! His work is a HUGELY important omission of science, not just of the history of science.

16Jul2018 p223h0.3 "... The theorists had a glimmer of hope: the radiation reaction produced an equation that was proportional to acceleration! But it wasn't quite right. It had an extra factor of (4/3).

Radiation Reaction force :  $f = \frac{4}{3}m \cdot a$  (4/3 not in Newton's Law) ..."

>>..Is this like Bill Lucas?

>>..27Sep2018 Lucas' "Universal force" addresses radiation reaction. But to me, it is far more powerful, as well as being axiomatic, unlike pretty well everything since Newton. Is it right? Dunno - but I'm working on a verification via step-by-baby-step derivations.

p225h0.1-0.85 Mills  $H(1/137) = H(\alpha)$  . 511 keV equivalence of [electric, magnetic, mass] "... Perhaps mass and charge are, in fact, a singular substance; it is the world that underlies sensation, it is the substratum of existence, or (to borrow from the ancient Greeks) the arche from which the architecture of the world is built. ..."

>>..This definitely sounds like Bill Lucas!

18Jul2018 p225h0.9 "... The creation of matter from energy is, in many ways, the fulcrum of physics. ..."

p226h0.6 "... Suppose we were to ride one of these field lines inside the photon as it undergoes pair production. At the moment of transformation, the field line is absorbed by space into a ring of flowing current. This might happen, by analogy, the same that an LC circuit (one with a capacitor and an inductor) can absorb electromagnetic waves. Except that space is the circuit, with its two fundamental constants, vacuum permittivity and vacuum permeability, giving it a natural frequency at which it is safe to absorb fields and transform them directly into electric currents (Mills 2015, Ch 28). ..."

p227h0.25 "... A particle is born. ..."

>>..Something like zero point energy?! but with a mechanism.

>>..27Sep2018 Zero point energy has a mechanism, though I don't remember details. In any case, the "mechanisms" in both cases are largely speculative - and that's alright. ..."

18Jul2018 p228h "Like excited states of the hydrogen atom, they are unstable and quickly decay back to an electron. But unlike atomic excited states, they have additional mass. ..."

>>..Unstable RELATIVE to local Zero Point Energy (ZPE) (electric potential), if you like that concept? There is a very interesting description of ZPE in Barry Setterfield's papers and videos. .

>>..29Sep2018 I'm weak on this subject) I have not understood Mills' local space contraction and time dilation? How is this different from run-of-the-mill [Special, General] relativity?

>>..It's VERY interesting that you emphasize LORENTZ transformations, given that Lorentz & Poincaré did not go so far to state that  $c$  is the same in all frames (which I doubt very much now). Ives (& Stilwell? - atomic clock) also took the Lorentz perspective, and specifically rejected Einstein's if I remember correctly (1941? - wow I really can't remember the details).

29Sep2018 p228h0.3 "... With Mills' equations, the fundamental particle masses became derivative constants. This was the grand achievement of his model. ..."

>>..I didn't write down a comment at the time I first read this, like so many others. But it was quite a noticeable comment.

Again, I have to do my homework (sometime when I can) to check the basis for Mills' model and understand it.

>>\_The calculation of, or the reduction of the number of constants in a model of fundamental particles is very important, and has been claimed by a number of researchers. Bill Lucas I think claims none? Hoholzen? arrived at only one constant based on a fractal (Zierenpiensky?) approach, but I forget the model [basis, description]. NPA2018 German? had a beautiful, solidly intuitive model for [atomic, molecular] structure with stunning results. On that basis, he beats all others I seen (quantum mechanics is so dead last its amazing). Mills' model isn't clear to me (not having read it!), but I sense that it is rather closer to the yap-and-handwave of the quantum mechanics than a solid phenomenological model? Maybe I'm wrong.

\*\*\* 20Jul2018 p229h0.9 "... Just as the speed of light (or, equivalently, the speed of gravity) is a speed limit for the universe, so too is the Planck mass the weight limit for any particle. ..."

>>\_So Mills is a "believer" in [black holes, General Relativity, bending space-time, gravitational waves - LIGO, etc], as seen throughout this book. It is perhaps somewhat before I got to this point in the book that I started thinking about how "renegade Mills is with respect to quantum mechanics, but how dedicated a disciple he is with GR. I've come to expect this of exceptional thinkers. As I first really noticed in areas of science like [climate, environmental, astronomy, physics, geology], people who were outstanding [critics, skeptics] of one giant science religion, were [slaves, disciples] of others. Again - Alexandre Solzhenitsyn's "Gulag Archipelago".

>>\_To me - it's NOT really so important that one idea is right or wrong, (easy to say if by practice you assume they are all wrong!), it's the diversity of thinking that counts.

### 13.13 Chapter 13: Theory and practice, p237

### 13.14 Chapter 14: Hydrino universe, p253

18Aug2018 p258h0.8 "... What could dark matter be? Perhaps objects that emit no light, such as black holes or remnants, Jupiter or brown dwarfs, white dwarfs or neutron stars. Astronomers looked for these Massive Astrophysical Compact Halo Objects (MACHOs) in the galactic halo by studying how their gravity bends light from galaxies beyond, but didn't see enough of them to explain so much missing mass. ..."

>>\_These have been mentioned in references I looked at (news comments over time), and my impression is that they may be there in much higher numbers than thought. Dust may also fit the bill more than allowed by the privileged scientists.

>>\_02Oct2018 I have No confidence in the use of the bending of light (General Relativity) as an indicator. This is using a theory under question to disprove itself...

\*\*\*??Aug2018 p269h0.3 "... Is dark matter actually hydrino? It seems to fit every feature of the problem: ..."

>>\_Great list!!

### 13.15 Chapter 15: Eternal tide, p273

08Aug2018 p276h0.4 "... On the scale of the cosmos, gravitation rules. ..."

>>\_Did Bill Lucas also think so? Who else? - General Relativity, debunker's, several //

>>\_02Oct2018 Probably BS - but with a "multiple conflicting hypothesis" (MCH) approach, this great religion of [astronomers, physicists] is retained. It has for some time seemed to me that the Electric Universe perspective is superior on almost all accounts, but it isn't supported by mainstream disciples of the mainstream, and all can be questioned.

?01Sep2018? p280h "... A universe that obeys General Relativity, without the cosmological constant, must be doing one <of >the following :

1. Be collapsing
2. Be expanding, but decelerating at such a rate that it will eventually fall back in on itself and collapse. This is a 'closed' universe.
3. Be expanding, but decelerating at such a rate that the universe will never collapse, but drift outward, for all time. This is an 'open' universe.

In all these possibilities, gravity dominates. There are no other forces that can act on this scale. And in all of them, the universe is either collapsing, or decelerating. ..."

>>\_NONSENSE!!! :

1. You don't know that. It's an assumption that you know everything!
2. Failures (universal) of understanding electricity.

>>\_09Sep2018 [physicists, astronomers] have been consistently wrong about the role and behaviour of electricity in astronomy for >>\_100 years. This "turbic" thinking consistently leads to "grossly erroneous truths" that have only been partially corrected



02Sep2018 p293h0.0 "... If we disregard the big bang as scientific fiction, do we dismiss, finally, arguments for a Creator? Perhaps religious beliefs will evolve as they have been forced to do before.; instead of a creation: a continuum of change; instead of a creator: a custodian of time. ..."

>>\_Religions do NOT need a creator! Their search for explanations and change with time is the SAME as science, and to some degree science EMERGED from religions! It certainly shares the unthinking belief in scientific religions, as religions do for theological themes.

02Sep2018 p293h0.6 "... I find eternal time a comfort. Whatever the fate of the human race, the universe will go on, and after coldness and darkness refold on itself, stars will emerge with planets kindling new life, new intelligences, who will look out on the world with curiosity and the desire to live. ..."

>>\_So what? This is essentially meaningless, baseless. Insert what you may. related to a ?m? (?meaning?) ->We must have a causal explanation, for the lack of which we arbitrarily create one.

>>\_16Oct2018 This is where science goes horribly wrong all the time - jumping to imperative conclusions and mistaken understanding.

### 13.16 Chapter 16: Arbiter of truth, p295

\*\*\* 02Sep2018 p301h0.0 "... Reflecting on his difficulty introducing Mills's work to his peers, Jansson now believes that the scientific culture in physics is no longer letting data be the arbiter of truth. We are letting our minds be influenced by theory, by the mathematics, by the strong paradigms in that field.

>>\_YES!

>>\_16Oct2018 Maybe now you see why I say that science=religion. A collection of beliefs and systems. Essentially NONE of the [government, academic] scientists are COGNITIVELY capable of doing any better, especially in their own areas of expertise. Homo sapiens encore.

02Sep2018 p308h0.2 "... Among their results, they found that the energy produced from cells with nickel anodes trailed off over time, but those with molybdenum anodes saw a consistently high output. From the peak that the cell reached at day 3, to when the cell was turned off 39 days later, they found only a 30% drop in power output. Like the early electrochemical cells from the 1990s, experimenters were finding that hydrino catalysis occurs slowly over time and the cell might never return to the baseline. ..."

>>\_?Possibly due to electrode reactions (poisoning) over time? Overpotential, EZ water (Gerald Pollack's structured water phase)?

### 13.17 Chapter 17: Cosmic conspiracy, p311

07Sep2018 p315h0.5 "... In a famous experiment, it was found that whichever direction you pointed a beam of light, it propagated at the same speed. Light, perhaps the perfect motion Newton sought to measure absolute space and absolute time, was constant but independent of the motion of the source or observer. ..."

>>\_WRONG!! The ?1896? Michaelson-Morely interferometer experiment showed the OPPOSITE, in spite of the incantations of 110 years of incompetent physicist (yes - all of them). The ?1922? Michaelson-Gale interferometer experiment, at a much greater accuracy, disproved relativity, and so have almost all but a couple of "recent" interferometer tests", which I suspect are screamingly [dishonest, conformist], like so much science. You do NOT need relativity to derive the relativistic correction factor - that falls out from classical physics in a much more solid manner.

>>\_16Oct2018 This is like the "effective mass" correction, which is derivable by classical [optics, measurement] theory & Ed Dowdye Jr's "Extinction Light Principle".

>>\_16Oct2018 Relativity anomalies :

- atomic clock [fiascos, blindness] -such as aircraft circum-navigating the equator (time differences are opposite for opposite directions), also see Ives papers circa 1950?).
- GPS systems (Engineers had to reject relativity for many if not most GPS systems to get them to work. Arguments seems to circle around (relative vs absolute) GPS systems, but I have no confidence in the statements of the absolute promoters, so for now I assume that's bullshit too),
- and probably Mossbauer particle collider stuff is flawed in its support, but I haven't gone into the details of the critiques for those areas
- But perhaps the most [fundamental failure, corruption] of all, is the disappearance of the "c is not constant" reality for the last 300 years, along with sever attacks on those [brave, foolish] enough to point it out.

07Sep2018 p315h0.6 "... Einstein felt that this was tremendously important. Perhaps Mach was right. No ether, no absolute space, no absolute frame of reference in the universe. Perhaps all objects moved only relative to one another. It became the

conceptual basis for his theory of relativity, in which he drew out the implications of equations that had been developed by Lorentz to account for objects moving at near light speed. ..."

>>\_But Mach did NOT infer this at all!!

>>\_23Oct2018 I'm probably wrong about my last comment, after a tiny bit more reading. However, I still feel that the statement is at least incomplete, possibly partially wrong. In my current project, Mach is important in the work of Bill Lucas, but for entirely different reasons - more to do with whole-universe effects at the fundamental level of physics, leading to inferences about a center of the universe. Of course, perhaps there are echelons of local to universal?

07Sep2018 p317h0.5 "... There has never been a case in which the principles of relativity were not found to be true of the world. ..."

>>\_Absolute BullShit!!! It is more accurate to say that ALL data contravenes [special, general] relativity.

>>\_23Oct2018 See my previous comments about GPS being based on absolute coordinates (at least some of the GPS), non-constant speed of light in a vacuum, classical methods to derive relativistic correction factor and effective mass, interferometer denial of relativity, etc, etc, etc.. The author is a religious disciple here, not someone who has looked at the dogmas and mantras.

07Sep2018 p318h0.65 "... If we have learned anything from the history of twentieth century physics, it is that subtle philosophical assumptions may have a strong influence on scientific reasoning. Ideas frame the problem and place constraints on how it may be solved. ..."

>>\_No kidding - especially frauds.

>>\_23Oct2018 At this point, the author still has not clued into scientific theories as (fashion->cult->religion), and the behavior of their religious disciples. Many others have commented, but I find it strange that a philosopher does not.

07Oct2018 p322h0.6 "... Perhaps everything is not relative, some things may exist though they may not be directly observed. Einstein was insightful, but he struggled with the bias of inherited ideas. ..."

>>\_Great expression!

07Sep2018 p322h1.0

>>\_So Mills is somewhat similar to, albeit more primitive than, Bill Lucas on Mach's principle.

## 13.18 Chapter 18: Quantum quagmire, p323

HOWELL - The "Tooth Fairy" chapter.

\*\*\* I really like and appreciate Hoverstott's book, in spite of my ripping comments. But why does he have to undermine his overall credibility with mindless [comments, beliefs] without doing his homework. In this Chapter he is a [politically-correct, mindless] intellectual robot, entirely conformist to many of the modern great religions of science and policy. Holverstott is MUCH better than this!!! ARGGGHHH!

07Sep2018 p326h0.25 "... In 2013, Roger Bach and his team at the University of Nebraska performed Feynman's thought experiment for the first time. But we knew what to expect. The experiment had been conducted in various configurations, first with light, then with matter, for 200 years. ..."

>>\_Did I see this experiment (by different scientists) in Maryland 2010 (Natural Philosophy Society conference)?

>>\_Author's description of the experiments is quite good, covering number of research groups and interpretations, plus experimental limitations.

07Sep2018 p326h0.5 "... The photoelectric effect, explained by Einstein in 1905, demonstrates this. If you shine a light on a metal surface in a vacuum, electrons will jump off the surface. If you increase the frequency (and therefore energy) of light, the same number of electrons will jump off, but at greater velocity. Only if you shine more light, more of what Einstein called photons, on the surface, do more electrons jump off. To make the jump, each electron needs to swallow a proton whole, so to speak. ..."

>>\_Doesn't work with amorphous metal surfaces.

\*\*\*07Sep2018 p327 Kocsis experiment

"... Mills Interpretation: A photon passes through one slit. It is momentarily absorbed and emitted by the screen, which imprints a classical radiation pattern on the trajectory. It proceeds along a straight line to the screen. ..."

"... Kocsis experiment: The reconstructed average trajectories of single photons in the double-slit experiment. A team used weak measurements that were only able to yield approximate information on the momentum of each photon as it impacted the screen. After that in (Kocsis 2011). ..."

>>\_WOW! A bit like Ed Dowdye Jr's "Extinction Shift Principle"!

07Sep2018 p328h0.05 "... In 1924, a young French physicist, Louis de Broglie, deduced that material particles might have a wavelength associated with their mass-energy. As it turns out, experimentalists were already scratching their heads over results

that seemed to show electrons being diffracted in a crystal lattice. They had not published their results, of course, because they didn't know how to explain it: revealing again that we are often only confident in new observations when in the soothing embrace of new theory. ..."

>>\_Great point! Conclusions-driven science.

>>\_It might of been de Broglie who said in the 1960's that we should revisit derivatives of Max Planck's 1911 paper on quantum mechanics : Zero Point energy, which may be equivalent, or show a different perspective?

07Sep2018 p329h0.55 "... Like the trains in the analogy, a quantum particle may be described by a wave-train which must be drawn out over space to have a regular beat, and the beat gives us the momentum of the particle. ... Both the theoretical postulate, and the experimental postulate, form what has come to be called the Heisenberg Uncertainty Principle. ..."

>>\_WRONG example? - conceptually different?

>>\_23Oct2018 Maybe this isn't a bad analogy, I just think that the point was missed.

07Sep2018 p330h0.5 "... Perhaps the nature of the world must be observed to take on a scientific value. Perhaps the world does not exist independent of our knowing it. Or perhaps we simply have a bad theory. Perhaps, perhaps, perhaps. ..."

>>\_YES to the bad theory. World doesn't exist without our knowing it - proof of the fundamental stupidity of scientists and philosophers!! (big time)

>>\_Some of the discourse reminds me of computer programming : as code matures, it collapses hugely, becoming more [general, compact, reliable, powerful, robust]. Loose theories do not merit strong beliefs. Certainty is most often the symptom of a fool?

08Sep2018 p332h0.3 "... Perhaps the problem is not with the physics, but that our minds are not well-equipped to deal with the realm of the atom. Bohr thought so, and proposed a new style of thinking in which we use different conceptual lenses to look at the same problem, even if those lenses are inconsistent. He called these lense "complimentary" and he called the inconsistencies, "reciprocal" properties of a thing. We can only look at a quantum particle with a particle-analogy or a wave-analogy, but not both. Bohr imagined that perhaps all of our concepts would be improved by that kind of thinking, and gave another example: the experience of free will versus the physical machinery of our brain. Perhaps these are complimentary in the same way. ..."

>>\_Howell approach - "multiple conflicting hypothesis" (MCH) is MUCH more powerful.

>>\_23Oct2018 Brain - zero-dimensional thinking has no hope, math and thinking that doesn't exist are needed to understand 8 neurons in a fly's eye. Progress? sure, but an astronomical distance to go before we get up to bat at home plate.

08Sep2018 p334h0.5 "... While quantum theoreticians had forgotten about the problem of radiation in the atom, and obsessed over the double-slit experiment, Mills only turned his attention to it fifteen years after solving the problem of radiation. ..."

>>\_Yes - observant!

28Oct2018 p25 "... Mills found that a diffraction pattern seen on the screen matches a classical radiation pattern if we treat the slits as something like radio antenna, yet one that preserves the momentum of the photon as it passes through. ... When you perform a double-slit experiment with electrons, you must first allow the mask to be conductive (the Bach study used gold). Otherwise, electric charge just piles up at the slits. If you run a current through the mask, you also preclude the interference pattern. This is because when a charged particle approaches the slits, image charges emerge on the slit and photons are exchanged between the electron and the slits. These photons scatter with electrons and imprint the classical radiation pattern on those that pass through the slits. Like the previous case with photons, once the electrons are done inter-acting with the slits they follow straight line trajectories until they hit the screen. ..."

>>\_Again, very nicely described. I forget the essence of several other alternative descriptions I've read about how the interference patterns arise, and should compare them (some time in the uncertain future).

08Sep2018 p337h0.33 "... EPR <Einstein, Podolsky, Rosen> argued that for a theory to be successful, it ought to be both correct, and complete, by which there should be an element in the theory that corresponded to every element in the world, and by which we should be able to predict the outcome of any experiment. ..."

>>\_These concepts did NOT arise from EPR, they had been around for a long time. Newton and Lucas in the modern era, and probably many ancient [Greeks, Mesopotamians, Indians, etc].

>>\_28Oct2018 Furthermore, the AXIOMATIC basis for science is far more general and powerful, and is violated by Einstein's work.

\*\*\*08Sep2018 p340h0.5 "... If quantum mechanics is an incomplete theory - or moreover, if the theory is outright wrong - it is amazing that its predictions for for the double-slit and Aspect experiments were right at all. ..."

>>\_WRONG! Howell - "small world universal function approximators" - the mathematical model can make ANY concept including SWUFA work, whether [right, wrong, partial, ridiculous]. This is a key [gap, failure] in understanding of modern science.

08Sep2018 p340h0.5 "... The murky meaning of the theory is a problem; physics is not just about math, it is about the physical world. And while our minds should be open to new possibilities, we cannot lose sight of our most fundamental philosophical assumptions about the nature of the universe: causality, determinism, realism, and locality. These assumptions work. Our

understanding of them allowed us to climb out of the caves. ..."

>>\_Bill Lucas and others ...

>>\_28Oct2018 Author Holverstott, like essentially everyone else, fails to really address the murkiness, the options for incomplete and at least partially incorrect information, the inability to test, etc. And what are the implications of this for science and scientists?

08Sep2018 p340 general comment - Howell - statistics are a good way to prove a bad theory. It cannot generally be taken as a conceptual proof, except perhaps for [simple, totally measured, totally known] system - normally normally some classical science areas.

08Sep2018 p341h0.15 "... It is ironic that although quantum mechanics opposed the unobservables of the electron orbiting the atom, it did end up pointing a variety of unobservable features of reality such as virtual particles, hyper-dimensions, effective nuclear charge, zero-order vibration, polarization of the vacuum, parallel universes, and so on; features that were offered to rationalize mathematics, rather than flowing from our intuitions. ..."

>>\_GREAT POINTS!

28Oct2018 p341h0.25 "... Before the Copernican revolution, we had the Ptolomaic celestial system, in which each planet moved on an epicycle revolving on its deferent, offset by an equant that was different for each planet. The resulting system was able to map very well onto the observed celestial motions, but the epicycles we postulated unobservables that only served the math. ..."

>>\_I love this description

08Sep2018 p341h0.5 "... In retrospect, the system, in all its complexity, could map onto ANY potential celestial motion as observed from the Earth, because mathematically it is equivalent to a Fourier series expansion. You can refine it forever. ..."

>>\_YES! just what I have been saying about "small world universal function approximators".

>>\_28Oct2018 I'm not so sure that the Ptolomaic system has quite the power of a full Fourier series models, as it still seems to have some constraints.

\*\*\*??? Why doesn't Holverstott emphasize Godel's theorems of provability?

## 13.19 Chapter 19: Power of the Sun, p343

08Sep2018 p345 whole-page comment

>>\_[strange, politically-correct, misguided] interpretations of [history, life, real threats]

08Sep2018 p346h0.5 "... Meanwhile, those with access now realize that the ecological impact of our existing energy sources is unacceptable. About 80% of our energy comes from fossil fuel sources, which stress our ecosystems with chemicals like lead, oil, cadmium, sulfur, and mercury; require extraction and transportation of billions of tons of coal and oil; and contribute massive quantities of carbon dioxide into the atmosphere. Much of this CO<sub>2</sub> is absorbed by the Earth's oceans, acidifying them rapidly, with severe impact on ocean life. ..."

>>\_Total BS.

>>\_28Oct2018 Holverstott seems unaware that his concerns telescope throughout homo sapiens existence, albeit at different length scales. He should actually look at the dysfunctional [CO<sub>2</sub> as the primary driver of Earth's climate since the mid-1800's, ocean acidification, CO<sub>2</sub> levels, recent massive changes in pollution as society advances, etc] BEFORE jumping off a cliff. Can we kill ourselves? Maybe. Is that happening, maybe. Is this a conclusion? Of flaky intellects, yes.

08Sep2018 p347h0.0 "... Hydro-electric dams (which contribute about 18% to world energy use) are often viewed as among the most sustainable of sources as they do not result in CO<sub>2</sub> emissions. ..."

>>\_Blah-blah - he completely misses the limitations and constraints.

>>\_28Oct2018 Again - CO<sub>2</sub> intellectual dysfunction.

08Sep2018 p347h0.15 "... Nuclear power, although once hailed as the power source of the future, has turned out to be more expensive than we expected, unable to fulfill the promised length of operation. It produces radioactive waste with long-term storage requirements, and the power plants are vulnerable to catastrophic failure. Further, power plants are a source for weapons-grade plutonium, inciting battles over who gets to use it. ..."

>>\_Substantially wrong. Opposite to reality in many statements - author Holverstoot doesn't understand [real, fraudulent] economics of alternative energy, and that by making it impossible to run processes by incompetent analysis and constraints, EVERY energy source must fail.

08Sep2018 p347h0.6 "... So far, renewables have only made an impact equivalent to the the amount of nuclear power taken off-line over the same period, and have had a negligible impact on fossil-fuel consumption. We may, however, be at a turning point. As of the writing of this book, costs from solar electricity have recently dropped below the average cost of electricity for most users



in the United States. ..."

>>\_Wow! Seems massively "turbic" thinking (emphasize [dishonest, dysfunctional]). Any source of energy is cheap (even zero-cost) if it is subsidized enough and supported by an ocean of lies. Try looking even once at the "non politically correct" economic analysis, or just look at the national disasters with alternative energy. Perhaps coal is King again, maybe for wrong reasons, but at least it works.

08Sep2018 p348h0.4 "... While the tapestry is certainly feasible in concept, it would be among the most difficult tasks the human race has ever attempted, not the least because it would require all of us to curb our own excesses while we continue to boom in numbers and affluence ..."

>>\_this entire concept is CRAP! We [must, should] INCREASE energy intensity! Can we make alternatives work? Of course - best scenario is to go back to hunter gatherers where we fight constantly with neighboring tribes and rub sticks together. Holverstott's thinking is limited to his own beliefs in the absence of economics, competitiveness.

>>\_28Oct2018 I'm surprised that author Holverstott isn't a proponent of planned population, including long-term massive declines.

08Sep2018 p348h0.95 "... Even if we were successful at harnessing fusion, it may not be the ultimate energy source. A fusion is likely to be a central central power source, large and complex, perhaps modeled on a Tokamak reactor, in which a hydrogen plasma is held within a large toroidal magnetic trap while it is superheated to millions of degrees. It is not cheap power, it is not easily deployable in the third world, and comes with significant risk. ..."

>>\_BS! Assuming "successful at harnessing fusion power" implies solution of the others, unless everyone thinks like we usually do and prevents usage on the basis of really, really [dysfunctional, politically-correct, political party] thinking. It seems that author Holverstott is ignorant of modern fusion developments (eg materials advances with highT superconductors and other materials challenges). I wouldn't bet on the traditional approaches to fusion, although many have high hopes for 2030 timeframe, and completely differently [thinking, physics] could blow away not just fusion concepts, by modern physics (maybe even the SAFIRE model of the Sun - already violating the modern misconceptions of plasmas, in spite of Kristian Birkeland, Hans Alfen, and many others for >100 years).

Start of type-as-I-read on my cellphone (a bit late)

09Sep2018 This is where I started using my Samsung G4 with an "On-The-Go" (OTG) USB hub to type comments as I read the paper book.

p351h0.15 change to "... That's only 40% of the neutrinos we expected. ..."

p354h0.0 "... At CERN, they <neutrinos>were actually clocked at faster than light speed - which made a press sensation - but was soon retracted as a mistake. ..."

>>\_I had forgotten this ...

15Dec2018 p355h0.55 "... On January 14th, 2014, BlackLight Power announced a breakthrough. With a new kind of experiment, they had achieved a power density far higher than anything they had done in twenty-four years of research. With the success of the new generation of electrolytic cells, Mills' attention had returned to water. ..."

p357h0.2 "... When the day came (28Jan2014), BLP filled its general purpose room with investors and professionals. With the room full of observers and cameras rolling, the upper electrode of the spot welder falls onto the capsule, and with a sharp crack the capsule is gone: vaporized instantaneously.

Mills also demonstrated the bomb calorimeter used for measuring the total energy output, as well as the spectroscopy of the light produced. In his discussion, Mills felt he had finally demonstrated that quantum theory was invalid, as there was no quantum chemistry in the pellet that could produce an explosion of any kind.

"You can't prove a theory," Mills admitted, "but you can disprove a theory by experiment."

And he had done just that. ..."

15Dec2018 p358h0.7 "... Amazingly, the emission spectrum revealed that the gases were at a temperature of over 5,000 Celsius, closely matching the temperature of the surface of the sun (Mills 2015). It is also a good match for a broad 587 Angstrom peak seen in the diffuse EUV background from the interstellar medium, suggesting once again a link to dark matter (Jelinsky 1995). ..."

>>\_15Dec2018 Pierre-Marie Robitaille stated that gases could not give the broad spectrum of the photosphere : therefore it must be condensed matter.

p356h0.6 peacenik (grin - see beginning as well)

15Dec2018 p359h0.75 Most power output as light - solar cells ->BLP SunCell

"... concentrator [solar] cells had also been developed that could take thousands of times more light and convert it to electricity at a much higher efficiency. It was if the world had been preparing for the hydrino for thirty years. ..."

p365 Ah! But author stops short of real comments on biology-water-hydrinos (a bit like deuterium).

p366h0.0 "... Further, hydrino catalysis is, literally, the permanent removal of hydrogen from the Earth's biosphere. ..."  
>>\_Maybe not - natural sunlight conversion of hydrino to hydrogen over long periods? More exciting - [industrial, home] regeneration, and use of hydrino as an "energy sponge" : eg regenerative braking, nuclear reactor cool-down, etc.

\*\*p366h0.35 "... Perhaps, even, take hydrino catalysis to the point at which it catalyzes fusion events, in a hybrid hydrino-fusion reactor. ..."

p366h0.6 "... We may open the doors to new problems, such as the safe disposal of the salt from desalination, ... ..."  
>>\_Please, think of REAL problems, not easy-manage-stuff.

## 13.20 Chapter 20: Truth and delight, p371

p373h0.373h0.5 "... It <Mill's theory>will not revert us to the philosophical stance of the eighteenth century ..."  
>>\_Disagree, it puts us back there : experiment first ->concepts >theories ->models

p373h0.7 Vienna Circle - "The Ernst Mach Society" with a difference. Poincare's interesting improvement "... Poincaré believed that theoretical terms were inherently meaningful, but only inasmuch as they were abbreviations of what could be said in an observational language, one referring to sensory experiences. ..."

p374h0.8 "... The Vienna Circle ... and the recent interest in expressing mathematics and axiomatic deductive system. ..."  
>>\_Wow! Sounds like Bill Lucas a long time ago. Did Lucas comment on this group? He did comment on "Poincaré's" rule that FUNDAMENTAL laws of physics do not include the same constants?.

p376h0.85 [deductive, inductive, semantic] views - but philosophers are still slave to [rational, logical, scientific] reasoning, which is unable to describe "modestly complex systems" (circular definition), as shown by Computational Intelligence.

p378h0.25 "... Language can never fully describe a model, and therefore language can never serve as a placeholder for real cognitive processing. ..."

p379h0.65 "... We are post-quantum now. ..."  
>>\_I disagree. This is a RETURN to classical science. The real issue is that [statistical, quantum] thinking was pragmatic but not at all understood - it allowed scientists to generate a PRAGMATIC system that worked well, in spite of [inadequate, erroneous, inconsistent, incoherent] cart [concepts, theories, models]. Statistics is like a "small world universal function approximator, for which the concepts are not even particularly relevant, and which succeeds in spite of bad [concepts, theories, models].. Success is not at all a proof of the underlying [concepts, theories, models]..

p380h0.2 "... Perhaps we will find profundity, in simplicity. ..."  
>>\_Yes. It goes much deeper [historically, conceptually] than that clean statement.

p380h0.55 But a deeper understanding (often credited to an American geologist, but I suspect going back LONG before the 3 primary modern civilisations [Mesopotamian, Egyptian, Harrapan] : "... All theories are wrong, but some are useful. ...". To which I add:

"... But the most successful theories, which have passed through the stages of science fashion->cult ->religion, ultimately become our greatest IMPEDIMENT to progress, as their disciples destroy the personal [lives, careers] of any heretical [individual, organisation] that dares deviate from beliefs. ..."

p380h0.9 "... <empiricists>The epistemological bachelor. ..."

\*\*\*p381h0.15 "... Truth has a way of gripping the mind. ... ..."  
>>\_This is one important component of Howell "Multiple conflicting hypothesis" (MCH)

p382h0.1 "... A theory without a clear meaning can become an addiction, its concepts shadowy, and its predictive ability unproductive.

>>\_Howell - It's MUCH worse than this. Data-based, Computational Intelligence] approaches can easily beat [rational, logical, scientific] reasoning for complex systems. However, they are essentially impenetrable to the mind - we are NOT computers! So a BIG challenge in CI is to abstract a level of understanding from a much deeper understanding. CAREFUL - small-world-universal function approximators DON'T prove concepts, although they can substantiate them! (sometimes misleading us)

Hugely net-negative science - when diversity is lost, and lemmings migrate to the sea (even though they don't?)

p382h0.8 "... This is why we seek a unified understanding of physics, as opposed to a stack of theories, one for each need. ..."

>>..Sounds like Bill Lucas.

p383h0.6 "... From a psychological point of view, it is dangerous to be too committed to our theories, to believe too deeply. ..."  
>>..No kidding

p383h0.75 "... But theories that are designed to be empirically adequate are more likely to allow scientists to ignore new evidence that is inconsistent with the theory because any new evidence can, with trouble, be absorbed into an algorithm of sufficient complexity, and made sense if the conceptual framework of the theory is sufficiently vague. ..."

>>..Absolutely - see Howell comments on "small world universal function approximators" (SW-UFA) and "Multiple conflicting hypothesis" (MCH).

## 13.21 Chapter 21 : Path to the stars, p387

p384h0.9 "... The world is built by truth-seekers, and it is torn down and rebuilt, by the truth-seekers. ..."

>>..Very much a Bill Lucas basis. I also think that this is a "warm idea", but it's only a small (albeit important) part of what actually happens.

p390h0.8 "... <Brice DeWitt>In fact, we don't even know if it <anti-matter>will fall up! ..."

>>..Interesting. I'm not sure what Lucas's electrical <vibrating neutral dipoles>theory of gravity would predict. I suspect no change under the assumption that anti-matter still has conventional electrical charge. If not (a type of polarised charge or something?), then watch out!

15Dec2018 p392h0.85 "... Witteborn ... could not get electrons to fall more than 9% of the acceleration due to Earth's gravity. ..."

18Dec2018 p3940.15 "... We ought to expect a good theory of quantum gravity to give us something new. Mills's new theory was only a slight modification to the equations of General Relativity (specifically the Schwartzchild metric) but it allowed him to calculate the classes of fundamental particles and the relationships in their masses. It also allowed him to predict the accelerating, expanding universe before its discovery. ..."

p394h0.5 Randell Mill's 1990 connection between electromagnetism and gravity.

>>..This is a very old idea - going back at least to the nineteenth century, and Poincaré also mused about it. In the current context, Lucas's theory (vibrating neutral dipoles) is [complete, specific, axiomatic]. I would have to look for his initial publication date.

Alexander Solzhenitsyn "Gulag Archipelago" and those who knew themselves to be innocent, but didn't suspect that others were as well.... (see themes at start of review)

18Dec2018 p394h0.55 "... Recall that according to Mills, gravitation is a result of electromagnetism, or rather, relativity. It is a field of contracted space-time that is produced by circulating currents when a particle is born. Mills reasoned that if those currents define a three-dimensional surface of constant curvature, such as a sphere, a particle responded normally to gravity. After all, everything we see around us is made from particles that have this structure. ..."

>>..22Dec2018 Sounds nice - but what is the basis of this assumption? Is "contracted space-time" a physical or purely mathematical concept? I guess I'll have to read his papers ...

p394h0.6 "... Mills reasoned that if those currents define a three-dimensional surface of constant curvature, such as a sphere, a particle responded normally to gravity. ... If, however, a particle's currents did not have this curvature, the particle should have NO gravitational mass. Recall that when unbound to the atom, the free electron (as well as the muon and tau) is a disk of charge with no curvature. So Mills conjectured that free electrons shouldn't fall. And it is plausible that Mills is right : perhaps this was why Witteborn had so much trouble. ..."

>>..Brilliant! Does Bill Lucas' "solenoid" model for the electron correspond to the spherical curvature atom-bound Mills electron, but what does Lucas say of an unbound electron and whether gravity would affect it?. My guess is that this is a no-brainer - a free electron is NOT a vibrating neutral electric dipole!!

p394h0.9 "... Suppose we were to create a particle with a surface of constant negative curvature. Would it react negatively to gravitational fields? ..." (tractricoids and saddles)

>>..WOW!!!! Really cool thought.

p395h0.6 "But Mills imagined a tractricoid-like distribution of angular velocity of electron current superimposed on a spinning spherical shell. Currents at the equator move very slowly, but the currents at the top and bottom would almost reach the speed of

light. ..."

>>..I'm not [informed, comfortable] with this - it seems to me that [charge, momentum] still look more [convex, unbalanced spherical] than tracticoidal? I need to [look, think] more thoroughly.

p396h0.75 "... Mills and Ying Lu, operating the experiment, found that as the electron beam and gas pressure were varied, there were clear spikes in the top collector current at PRECISELY the energies predicted by Mills's theory. When the electron gun was turned off, the charge lingered; the electrons appeared to have a half-life of more than a minute. ..."

"... When Mills calculated the strength of his new phenomena, what he came to call the fifth force, he found that it was stronger than Earth's gravity by about one trillion times (Mills 2015). ..."

p398h0.15 No free lunch - Holverstott hasn't explained the energy considerations. I suspect that the potential required for the "anti-gravity" electrons would be huge, with energy loss. But that's OK, part of the bargain. The key is the motive force created.

p399h0.5 "... It is an infectious joy that Mills carries around with him, that endears him to friends and colleagues, and reveals that he has been driven for twenty-five years by his LOVE of the work, at once discovery, experiment, and invention, guided by the belief that the purpose of new ideas is to allow new works. He has spent half a lifetime trying to bring his work to fruition.

I hope he succeeds, for the satisfaction of his soul, for the benefits of mankind, and because it will be fun to watch. ..."

>>..Ahmen.