

Dawning of the SunCell®

Part 1 of a Series Investigating the Work of Randell Mills

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The reader is best served in obtaining the usual sorts of information one requires about a scientist (Randell Mills), directly from his company's website, www.brilliantlightpower.com.

Illustrations used herein were drawn by Matt Schmidt, for Brett Holverstott's book, *Randell Mills and the Search for Hydrino Energy*, and are used with permission.

Dr. Randell Mills is a Harvard trained MD, who dedicated himself to invention and physical research. He demonstrated strong creative and analytical talents that set him apart, and resulted in his current position as Chairman of the Board, President and CEO Director of Brilliant Light Power (BrLP), which was BlackLight Power not long ago. The company name change occurred after research emphasis morphed from glow discharge to arc discharge. Arc discharge intensity of reactions allows much higher rate of production of Hydrino (shrunken hydrogen atom) power. This then allows very high power and energy density, for very attractive technology emerging now, the SunCell®.

Randell Mills was a young man when his ability in chemistry emerged, fully apparent in high school. Where chemistry is most affected by Quantum Mechanics (QM) is physical chemistry, in which Mills excelled. The implication that anyone who could believe in sub-QM ground state orbitals does not understand QM is obviously an error. Mills' abilities are at the expert level in many areas, and physical chemistry was where his perhaps most profound insight occurred. I qualify that statement because Mills is demonstrating profound insight in so many areas. Brett Holverstott, the author of the recently published book, *Randell Mills and the Search for Hydrino Energy*,¹ labels him a polymath for good reason.

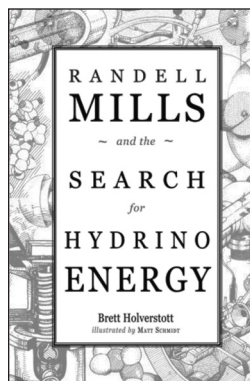
In fact, Mills' professor in physical chemistry at Franklin & Marshall College, John Farrell, believes very strongly in the work of his former student. He has plenty of time to think about it. With the help of Farrell, Mills maintains an online forum for discussing matters related to his company's work (Society for Classical Physics, SCP).² This forum facilitates the open discussion sought by those aware of Mills' treatise (*The Grand Unified Theory of Classical Physics*, GUTCP).³ It currently lists 273 members, and is a public group. Membership does not require approval, but messages are moderated by Farrell.

How Did Schrodinger See QM in Retrospect?

"I began to believe that a man who gives up an opinion that he drank in with his mother's milk, and that is accepted by people without number, to arrive at another that is accepted by very few, and denied by all the schools, and that really seems a very great paradox, must needs have been moved, not to say forced, to do so, by more powerful reasons."

These are the words of Galileo quoted by Erwin Schrödinger introducing his essay entitled, "Are There Quantum Jumps?"⁴ Galileo was shrewdly observing that the conditioning of early human life does not yield easily to complete rejection of what he initially "drank in."

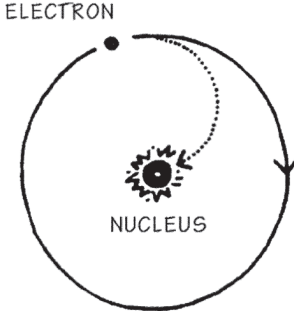
Galileo was observing how unlikely it would seem for a man who was well educated in the geocentric celestial mechanics of his day to nonetheless reject that theory, complete with epicycles, which made prediction of planetary motion quite accurate. Because the beautiful simplicity of the heliocentric model was irresistible, this parsimony could not be ignored. Explaining the physical world with the least



Randell Mills in the Brilliant Light Power lab, 2015.
(Used with permission of BrLP.)

THE BOHR MODEL

ACCORDING TO MAXWELL'S EQUATIONS, AN ELECTRON DESCRIBED AS A POINT, CONSTANTLY ACCELERATING AS IT MOVES IN A CIRCULAR ORBIT, SHOULD SHED ENERGY AND COLLAPSE INTO THE NUCLEUS WITHIN A FRACTION OF A SECOND. BOHR COULD NEVER EXPLAIN WHY AN ELECTRON ORBIT IS STABLE IN HIS MODEL.



amount of thought, in the simplest terms possible, is a scientific virtue. There was simply no argument to prefer the geocentric, except that is what had “always” been believed, told to us by God himself, in accordance with church authority. Well, Schrödinger knew he was no god, and it distressed him, the effect that his own theory had on society and thought. Our zeitgeist bears considerable influence from QM, taken as “gospel.”

Schrödinger was quoting Galileo as a way to portray how dominant classical mechanics was, and how educated he had become with it. Yet, the Classical Physics (CP) of Newton and Maxwell had apparently failed when tried within the domain of atomic physics. Despite the great power of CP, and its seemingly universal applicability, Schrödinger had to reject it for solving atomic physics. The physics that had emerged as a result of the Schrödinger equation showed great promise in explaining the analytic signature (the spectral lines) of hydrogen.

The atomic physics model proposed by Niels Bohr still enjoys great popularity, but it was realized soon after creation that it was fatally flawed. A charged particle undergoing acceleration, such as the Bohr electron experiencing centripetal acceleration, must radiate and therefore lose energy. The orbit would decay, but that does not happen in reality. The model must be rejected as disproved. It has been rejected, except for pedagogical purposes.

Now, I invoke the same Galileo quotation because an idea caused Randell Mills to reject QM, and it arrived with a great deal of empirical support: “...more powerful reasons.” Indeed, the reasons must have been very powerful to convince such a strong scientific mind.

What struck Mills when his MIT Professor Hermann Haus talked about the non-radiation condition was that there was an exception to the rule that accelerating charges must radiate. Mills applied the condition for non-radiation as a constraint on classical electrodynamics, and a great new expanse of possibility unfolded. But, could Mills be wrong? I do not see how, but the reader must decide. The GUTCP shows greater explanatory power than QM in matching the analytic signatures of *all* of the elements. QM started failing when extended to helium.

The bar that was reached in declaring Schrödinger's equation the winner was to produce the spectral signature of hydrogen, which was not easy, but there was no competition. There was lots of discussion and mind-bending math. That was enough to set it in the minds of the scientists, and to eventually capture the imaginations of the educated.

Beyond helium, QM cannot produce elemental spectral signatures because of the three-body problem.

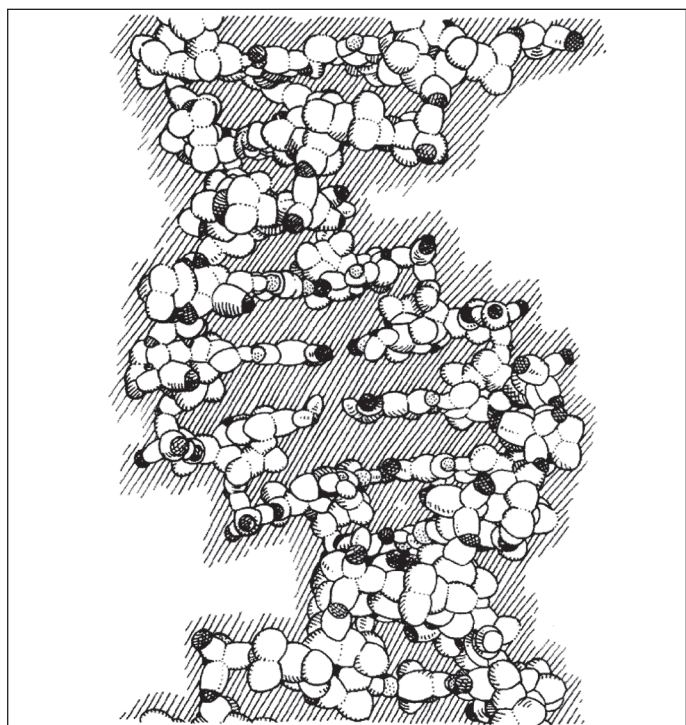
Are We a Society of Spoiled Brats?

The SCP forum is not a mutual admiration society. Sometimes (rarely), participants on SCP clearly do not believe Mills. This forum contains many supporters of GUTCP and admits detractors, of which there are few (no polling data available). I would like to see some physics and chemistry professors in the forum who do not believe Mills, and not just the ones who do. Some QM scientists believe that the results of GUTCP can be incorporated into QM, perhaps because QM is highly adaptable, possessing so many arbitrary parameters (27). To me, this appears to fly in the face of the fact that QM forbids fractional quantum states. I have not seen what I could call incisive criticism of GUTCP. Instead, I see vague references to discovery of “inconsistencies” within GUTCP that some people are said to have made at some point in the past. Dr. Mills has written formal rebuttals.

I have seen the mainstream slander of Mills' claims, and I understand it steers a lot of influence, but it is silly to believe that Quantum Mechanics is the ultimate theory, that it must not be judged like any other theory. Theories come and go.

To a criticism that Mills had been promising earth-shaking technology for so many years, without producing anything, he replied:

We are producing continuous sustainable power at 100X gain, over one million watts per liter with



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!

engineering that has no moving parts, all commercial parts [sic], over a decade durability, \$60/kW cost with direct conversion to electric using commercial concentrator PV cells, no grid or traditional infrastructure required. Along the path we hit low power, low power density, low gain, lack of regeneration, lack of sustainability, difficult power conversion, problematic engineering, high costs, difficult logistics, onerous course to market, huge capital and partner requirements, dependency on the grid and other huge infrastructure, and other issues that are all solved in the SunCell®. Moreover, we did it entirely alone with the support of private investment. No one stepped up to help us: academia, power industry, government, media, Wikipedia, they all tried to bring us down. Any prediction that I made regarding commercial timelines of a new primary energy source that we proved exists early on was under the assumption that we would get at least some support from society.⁵

The progress BrLP has made must be put into context, which Mills has done:

We are doing miraculously in perspective. For example, the gun took 400 years. The fuel cell and photovoltaics had their origins in 1839...

Take a hard look at how long any unknown technology took with massive resources compared to those available BrLP. That is why it is so fortuitous that we have the advantage of the correct theory and the convergence of other necessary technologies that are now available off the self.⁶

I concurred with Mills in my reply to him. I noted the following examples: Dr. William Cullen, a Scotsman, was the first to study the evaporation of liquids in a vacuum in 1720. Olivier Evans, an American inventor, designed the first refrigeration machine to use vapor instead of liquid in 1805.⁷ Refrigeration did not approach being a normal convenience until centuries after the basic research started. I also noted to Mills, "Science and technology build on themselves, symbiotically. The acceleration of their mutual progress is obvious. Moore's Law comes to mind."

I add a more recent example closer to the present and my home turf of electronics. The development of semiconductors began with the discovery of rectification effects in the "cat's whisker" detector, around 1904. Vacuum tubes proved much more valuable in amplification and detection, so the solid state discovery remained obscure. The result when solid state physics became better understood was the world as we know it today, dominated with microscopic electronics. It took many decades from the basic discovery to the societal impact.

Mills stresses that the astonishing progress they have made (blind alleys and all) is because GUTCP really works. It is not because of having the political connections needed to gain basic recognition as a great scientific discovery. That has not happened. Government largesse and business success were also not working for Mills. The basic discovery was proved convincingly, as seen in the *Infinite Energy* documen-

tary "Cold Fusion: Fire from Water." There was plenty of evidence produced by Thermacore, a well-established and independent reputable company, concerning the early electrolytic calorimetry published in 1994.⁸ This is not garage tinkers getting lucky. This is scientific revolution.

People have become impatient with scientific progress. Ordinary people typically fail to distinguish between science and technology. Declaration of a new scientific discovery is met with glib questions about how it will make life better, instead of curiosity probing the meanings. In fact, in historical context, Mills is progressing in leaps and bounds.

Exploring GUTCP

This article is not to convince you to believe or disbelieve Mills, but it may help you decide on how to approach GUTCP, and give you an idea of important unfolding events. This article is my honest attempt to report what I have witnessed, and to share my uncertainties and my conclusions.

When I first joined SCP, I was openly maintaining the skepticism toward Mills' theories that I had held for years. The reason for my skepticism was not that I doubted what I had read or seen in videos, supporting Mills' theory or the very impressive array of corroborated experimental results. After all, I had seen a broad array of claims of excess heat and nuclear anomalies for many years in studying LENR results. The question was simply: was the Hydrino model really supported? Did the Hydrino fit all the data that QM was touted to explain, or was it mostly an appealing explanation for other reasons, like being physical (not purely statistical)?

I soon realized that GUTCP dovetails with conventional physics (the part before the Bohr model failed), because it is conventional physics. As I read experimental reports, I saw there were clearly some very important things happening, such as the excess heat in Phillips' Evenson microwave cavity, and the inverted populations of hydrogen ions.

Back then, I knew very little about Hydrino formation, or how it results in high-speed ions, but I can now see how the Hydrino theory fits the data of inverted populations, and there is no other coherent explanation available, to my knowledge. An inverted ion population is normally only associated with laser technology, and Phillips' microwave experiment was simple calorimetry. Energy is released at extremely short wavelengths during Hydrino formation, outside the wavelengths of conventional chemistry. It extends into the extreme ultraviolet (EUV) and soft X-rays, which are harmless. The shorter wavelengths are at much higher energies, by $E = h\nu$, than accepted chemistry per photon [ν = frequency, h is Planck's constant, E is energy, Joules]. To explain this fact, not only was an explanation needed for the excess energy, but for the wavelength at which anomalously high ion population appeared, *i.e.* the analytic spectroscopic signature. Explanations that contradict accepted QM are unacceptable to most who believe what they were taught. The reluctance to address openly the potential radical change in understanding is a social phenomenon, which creates serious impediments. Holverstott uses Dr. Ignaz Semmelweis as a prime example of how human society can be astonishingly dysfunctional. There are many other such examples.

It took no conspiracy to destroy the life and mind of the great Semmelweis. He was an obstetrician who discovered the deadliness of sepsis and developed a practice to prevent

it, sterilization. This was well before Pasteur and Lister. Despite the good deal of physical evidence he produced, the papers he wrote and even the book he authored (which is still in print), he was ignored, persecuted and died the death of a neglected prisoner.

I have experience in tracking down evidence of anomalous energetic effects. At an earlier point in my career, I worked for Dr. Eugene Mallove. At that time, I did not want to spend the effort to understand GUTCP unless I knew it was very likely true. I always believed that learning GUTCP represented a multi-year commitment, but I now know that getting a basic understanding is not as difficult as I had assumed (by no means, easy!). This is because, unlike so much of modern physics, GUTCP makes intuitive sense.

There have been many claimed anomalous sources of energy described in the pages of *Infinite Energy*. I personally explored some of them, by designing and performing experiments, and reporting the results in occasional articles. There are clearly anomalies occurring and we tried to confirm them with experimentation, but this proved elusive. Not having a clear theory made guesswork necessary. The communication between researchers looking to find a particular approach to making excess heat was not based on an accepted theory, so there was a lot of misunderstanding, opportunities for, and instances of, fraud.

Dr. Robert Bush did a replication of Mills' electrolytic experiment, which employed light water, so cold fusion went from being essentially impossible to explain using heavy water (the three miracles of Hagedstein) to being even much less likely, yet excess heat and nuclear reaction products appeared. This collection of confusing indications did nothing to improve consideration of Hydrino theory, which was very unfortunate. It is a big, big leap for a career scientist to reject QM and start work to replace it. Bush's efforts were chronicled in *IE* #12,⁹ which also included an article about Mills worth reviewing. All of the references in the *IE* article about Bush do not mention Mills, although it was a Ni light water cell he was investigating, and finding excess heat, same as Mills. There is the mention of a Na salt he used, which Bush states contradicts Mills' expectation.

One could infer that Bush did not wish to be associated with the very controversial Mills, the heretic among heretics. His experiments are referred to as "CF cell." There is much bleating toward QM. Bush had his reasons. He was trying to appear reasonable and correct to Nobelist John Huizenga.

Dr. Mills was diligent in attempting to alert LENR researchers to the possibility (likelihood) that Hydrino formation could explain the difficult to repeat excess heat. Dr. Jonathan Phillips likewise attended at least ICCF14 for that purpose, which proved most fortunate for this writer, where I met him.

It is tough to find comprehensive peer review when the peers are dead. We would all like to consult Newton, Maxwell, Feynman or Einstein on the subject of GUTCP. That is not to say that no one can understand GUTCP, but the recognized authorities who enjoyed the gravitas to overthrow the incumbent theory, like the ones who originated it, are gone. Many have studied it, at least in large part, and everyone who has read it, whom I have had the luck to encounter, takes it very seriously. Is it perfect? Is anything perfect?

GUTCP presents derivation from first principles of an analytical method that is vastly simpler than the QM model,

which Richard Feynman considered incomprehensible, despite contributing so much to it. GUTCP eliminates physical impossibilities and empirically based "rules of thumb." It makes very many astonishingly accurate predictions of measured atomic and molecular characteristics. There are no arbitrary parameters in GUTCP, unlike QM, which makes selection of many arbitrary parameters a prerequisite to calculation (empirical "basis sets"). That one fact should give plenty of reason for serious consideration. The comparison that Mills lays out on page 5 of GUTCP, between how GUTCP and QM handle various difficulties, is claiming great superiority for GUTCP. Each of these are explored in the treatise in detail.

Chemistry has a history as an empirical science. Very important things were discovered, but the underlying physics was obscure. QM was the initial attempt at explaining physical chemistry, to make it more of a theoretical science.

In other words, we no longer need to settle for "best guess" theory and "best guess" modeling when dealing with atomic and molecular structures. Mills has developed a method so refined that it is marketed as modeling software, Millsian 2.0. Yet, there has been little apparent impact from this discovery in the academic and industrial worlds. Surely, such success as predicting the acceleration of the expansion of the universe and the shape of complex molecules with the same Hydrino theory would have won acclaim and honor for the discoverer. That is an assumption some skeptics use to ignore GUTCP. It is so facile to believe that if GUTCP was true, then somebody important would have broadcasted it. The history of revolutionary theories and the history of honesty from authority do not support such ordinary expectations.

Is GUTCP "too good to be true"? Michael Faraday said, "Nothing is too good to be true, if it be consistent with the laws of nature..." I submit that the reason that excess heat has been so fickle in LENR work is that the wrong understanding of nature has been applied, when attempted. Dr. Mills and Dr. Phillips (and others) made strong efforts to bring the attention of the LENR community to their real discoveries, to save them a lot of wasted effort and money, without much success.

When I met Dr. Phillips at ICCF14 and studied his published work, it made a lasting impression, but I simply did not understand QM well enough to know how to compare it with GUTCP. I waited for a technological breakthrough, and I was not disappointed. Dr. Mills kept the research coming, developing solid-state Hydrino devices (CIHT), and now the SunCell®.

The presentation of Hydrino theory has raised both scorn and praise. Initially, Hydrinos were created within electrolysis experiments, easily confused with the famous experiments of Drs. Fleischmann and Pons. Being a LENR scientist is to achieve a dubious status, even if the work is theorized within the context of QM. Ironically, Mills is actually an ultra-conservative, scientifically. Mills was telling them to abandon the only accepted theory that they believed had any hope of explaining LENR's excess heat and nuclear data, and start over from about 1900, reinventing physics. For people already nervous about being associated with the extremely controversial LENR work, it won few converts. To accept the anomalies of LENR was one thing, not easily

done. To totally reject QM was a leap into the unknown, and a likely fond farewell to grant money. Dr. Fleischmann was working toward theory utilizing QED (Quantum Electrodynamics), pioneered by Richard Feynman, Julian Schwinger and Sin-itero Tomonaga. Most other LENR theorists kept within the theory of QM, from what I surmise.

To call Mills' work new physics is not wrong, but it is just old physics more ingeniously developed and applied than previously. Mills' MIT Professor Haus provided the kernel for the theory developed by Mills, but the non-radiation condition had been studied by others. What is happening is that a very old paradigm, CP, is now working better than ever for physics because of GUTCP. There have been many ad hoc explanations generated to support QM physics. We want science to make sense, and if Hydrino physics can explain all that needs to be explained in a physically conceivable way, while remaining in 3D + space-time, I like that a lot. QM clearly cannot be physically understood, so it is debatable whether or not it can even be physics, but not hard to want to forget it. GUTCP needs to explain everything that developed theoretically as influenced by QM, in order to replace it. Mills has made great progress in showing the scientific

world that this requirement can be met.

Most of GUTCP is demonstrating the power of the theory to predict or model. The kind of study required for this is intense, but what I see in the SCP is very encouraging.

Mills learned from Haus about his work that used a unique approach to solving for a condition of non-radiation for an accelerating charged particle. The young medical school student recognized the significance of Haus' work within the development of QM, which tells us something of Mills' intellect. The difficulty of modeling the structure of the atom was supposedly solved with QM, but the

result created big problems in interpretation, as it required, literally, a different set of physical laws and concepts than were well-established. Solving the structure of the atom within the established Newtonian and Maxwellian paradigm was very much desired, but surrendered as unattainable.

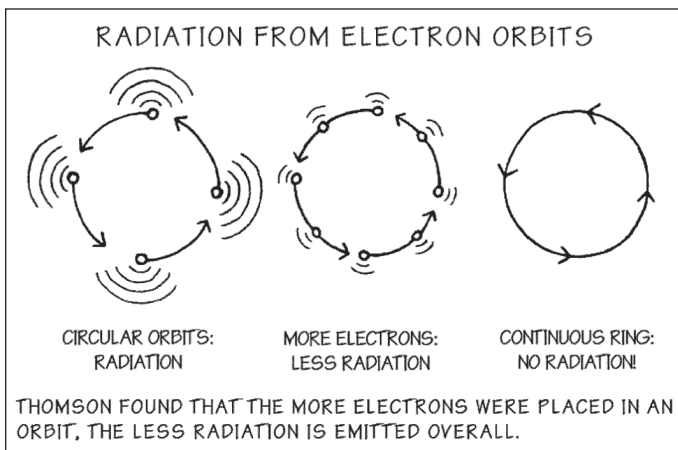
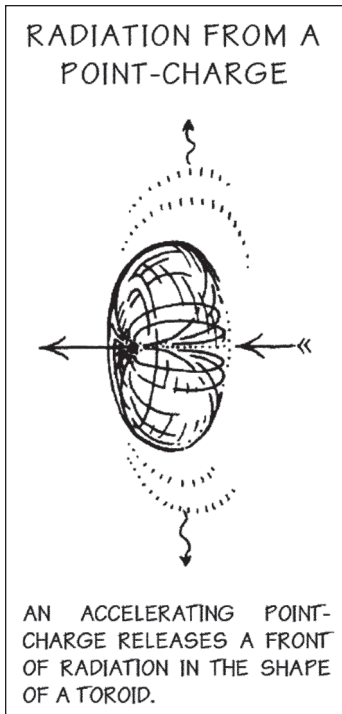
I presented the following question to Dr. Mills:¹⁰ "Tom Stolper is quoted as saying that Dr. Haus found your math 'competent.' Did Professor Haus ever offer any comments about GUTCP?"

Mills replied, "Yes. Haus told me in a personal meeting that I had correctly applied classical electrodynamics to solve the electron and related problems, but he was receiving a lot of awards and accolades and dared not challenge the quantum physicists. He feared reprisals, if he started a turf war."

This will be hard to accept for many people, that an MIT electrical engineering professor declined to openly support this prodigy in his quest to make sense of atomic physics, when Haus knew Mills was right, but there it is. Haus openly admitted the derivation of the properties of the electron from classical electrodynamics, developed by Mills, was competently done, but he failed to admit the significance.

GUTCP explores all (to the best of my understanding) of the basic arguments supporting QM. It requires close examination of Mills' massive treatise to see this. Let us keep in mind that the basic facts about the success of the theory do not require complete understanding of all of the issues. One change in the way the electron is physically represented ripples through physics and exposes the waste of effort exerted in making QM the institutional foundation it became. No one likes to see their efforts exposed as a mistake, to think of their lifetime of study largely negated, and to see their field of expertise the sport of comics. It was much easier to ridicule Dr. Mills, instead.

If I were to debate with a quantum physicist, I would focus on the basic qualities of a good physical theory: logically coherent (as seen in mathematical compatibility with accepted theory), experimental repeatability, data prediction and precise fit, and parsimony (Occam's Razor). In a side-by-side comparison with QM, as listed in GUTCP, it blows the competition away. A quantum physicist has quite a mountain of his own arguments, such as the apparently proved Bell's Theorem concerning nonlocality. This debate needs to occur between open-minded scientists and Mills (or other GUTCP literate scientists). Mills is available to defend his positions. Where are the scientists who are so certain of his delusion?



The Debate

GUTCP has slowly gathered many admirers and adherents, with impressive credentials.

One member of the SCP forum wrote this:¹¹

As a retired ChE [chemical engineering doctorate] researcher I would see Dr. Mills' 20 Hydrino analytical signatures as a most convincing and powerful, supportive evidence that this is real. The data and procedures are journal published and available to all. More urgency is needed to convince outside groups, especially academia, to replicate these results spontaneously. Detractors might try to

explain some away as due to “artifacts,” but nothing convincing has appeared, plus, that argument falls way short when you consider all 20 in total. Many of these are straightforward and well within the capabilities of most labs. Although requiring special instrumentation, as far as I know, *EurPhysJourD* is still waiting for their plea for outsiders to report on replicating the unique EUV spectra.

One should at least look at the freely downloadable GUTCP.³ Mills illustrates the ways that empirical data, heretofore unexplained or poorly explained, fit neatly into the observable, consistent and causal scheme he has for us. Some of the reason that word about Mills does not propagate well is the steep learning curve. This subject matter can quickly consume a great deal of your attention. My own apprehension about writing this series causes me to place the onus for deciding the truth of the matter onto the reader. So, stoke your curiosity and get to work!

The SunCell® reactor can run “24/7,” as recently demonstrated in a short video.¹² It is running at a power low enough to prevent melting of the (stainless steel) container, with impressive power bursts I would like to see in slow-motion video. It looks like they are ready for using the tungsten container, and may be using it by the time this goes to press. In other words, they appear to be on schedule, which calls for operating units early 2017 and commercial products by June. Keep in mind this is not a promise. It is a schedule. Invention is prone to surprises, but the bulk of the invention with the SunCell® appears successfully completed.

The use of molten silver to close the massive current circuit was very clever. The liquid is fed with a Lorentz force (electromagnetic) pump. There are no moving parts, except for the coolant pump. It appears it will be a very robust technology, with no significant penalties for using it. It will put more Hydrinos in the environment, but those drift into space. Humans are already making heat roughly commensurate with what a Hydrino economy would make. The “downside” is that it is not free. BrLP owns it, and we lease it. But, it's a great deal.

The benefits to the environment of a Hydrino economy are breathtaking.

Randell Mills is straightforward and covers much ground in two extensive 2016 demonstrations performed in front of an audience, and available on video from the website.¹²

Studying GUTCP is gratifying, but difficult. This is somewhat like when DNA was confirmed to be a coding system, that could be decoded, and all the machinery of the cell soon started coming into focus. How many people are capable of correctly reinventing flawed science, and then exploiting the improvements in numerous ways? It is richly inspired theoretical and practical work. This work is hard to fully appreciate, except by reviewing all the physics that was based on the Schrödinger wave equation, 1926 until now. It is not the case that QM is completely wrong, but that it presents a view of reality inferior to how we see the macroscopic world with CP. QM lacks clear explanatory power, but (with the help of 27 arbitrary parameters) it can deliver useful solutions.

GUTCP's development did not need a committee. The physical interpretation of the Schrödinger wave equation (this is still a mess) required committees from the start. The

Copenhagen Interpretation was not the only group effort to try and make some physical sense of the Schrödinger wave equation. It was the most successful, that is, the one that is found in physics textbooks. GUTCP could be immediately applied to determine Hydrino forming reactions, which Mills did without getting approval from anybody. An interview¹³ of Mills published in *Infinite Energy* in 1997 described the basic Hydrino theory, the astronomical implications and other aspects of the theory, and there are earlier records of the basic Mills theory that Holverstott describes. There is no question that Mills was predicting the discovery of the acceleration of the expansion of the universe, prior to discovery of that accepted fact.

Rather than crediting Mills, acknowledging his priority, and seeking to understand how he arrived at his astonishing conclusion of universe expansion acceleration, the physics establishment created new physics. Dark energy was then supposed to be real. It remains unexplained, but we are assured that it must be real. Is it not amazing to realize how much the failure to explain the electron in classical physical concepts has gotten us to this “make it up as you go along” science?

I must confess my bias. I believe Mills is correct in very significant ways, because I find no way to disbelieve him, and not for lack of trying. I was dragged away from my last vestiges of skepticism kicking and screaming. This is clearly not the same as failing to disprove GUTCP, something I am not educationally equipped to do. I would do well to comprehend and appreciate the state of development of the theory. It is possible to accept the reality of empirical evidence without understanding the full theory that explains it. We all do.

SCP forum participants get excited when Mills makes an announcement, like the sustained smooth reactor operation demonstration. Or, the recent sublimation of tungsten, which shows direct power readings far beyond what accepted chemistry can explain. In other words, this is an experiment requiring only very basic understanding and no interpretation, not by trusting the test equipment, just “by inspection,” as Mills put it. The achievable, sustainable power density is potentially higher than presently available materials can handle, but it is controllable. That is a very good thing.

BrLP's “Fall Industry Day” was held on October 26, 2016. The demonstration preliminary report is that it went very well. There have been major improvements in the amazing reactor. Photovoltaics are still in development. Video of the crossing streams of molten silver, acting as the new electrodes, is fascinating.¹² It includes the latest design drawing and photos.

The Debate That Must Happen Soon

If I were to debate a quantum physicist, I would ask him if it made sense to him to support an idea whose originator wanted desperately to abandon it, if he had an alternative. As I will show, Erwin Schrödinger hated his own brainchild, and we should respect his hatred.

Schrödinger delivered a number of essays for public consumption to help ordinary people get some idea of what the scientific thought of the day encompassed, and where it was going. The essay referenced earlier, “Are There Quantum

Jumps?”, is a main subject of this set of essays. By the publication date of 1952, it was 26 years since his 1926 publication of a technical paper that signaled the beginning of Wave Mechanics, a probabilistic approach to explaining atomic physics. Quantum science was initiated by Max Planck in 1900 with the discovery of apparently discrete energy quanta associated with energy transitions. That observation obviously still stands, but its interpretation, like the double slit experiment, is still not settled.

Were they really discrete, meaning that no energy state or physical state existed between the recognized states? Planck was not so sure. Evidently, neither was Schrödinger. I was taught in physics and engineering courses that the discrete nature of the states was established, that the “quantum jumps” were the real deal. Intermediate or sub-ground states are “forbidden.” The fear that this conclusion was based on artifacts of the experiments haunted Schrödinger. Was the atom really so physically different than the continuous macro-world?

What Are the Implications of Accepting GUTCP?

The worldview that people have is just part of their everyday experience. It usually remains unexamined. Seemingly, no intention formed it, and to believe so is maybe to invent conspiracy theory. The interpretation becomes the scenery of the worldview as we come to rely on a set of assumptions in some area, as if they are more than assumptions. The interpretations tend to assume the texture of fact when shared by many. Who thinks that their view of human existence is, to some extent, a product of the ways in which QM has been interpreted? QM grew into a cottage industry. What it lacks in physical usefulness, it makes up for in poetic inspiration. Religion, literature and science rely heavily on interpretations laid on Schrödinger’s equation. The interpretations are the stuff of so many academic careers.

To face the daunting prospect of re-evaluating every physical property of everything in existence in concrete, deterministic formulations, is more responsibility than most care to (or could) undertake. Then, what alternatives do they have? Of course, shoot the messenger.

This change, technologically, socially and psychologically, could commence with suddenness. It potentially invokes a great stimulus to chaotic activity, which is hardly a new thing to the human animal. The examples of scientific revolutions, written about by Thomas Kuhn in 1962,¹⁴ startled the scientific world. People generally assumed that scientific revolutions were the result of steady accumulation of data that slowly tipped the scales away from an accepted theory, toward a new theory, the new orthodoxy. Kuhn realized this was incorrect. Accepted theories come packaged with their own societal context, a paradigm, a worldview, taken as obviously correct. For that to suddenly change can be a serious disruption in social terms, and a lot of non-scientific forces come into play.

English poet Gerald Massey effectively noted: “They must find it hard to take truth for authority who have so long mistaken authority for truth.”¹⁵

James Bowery, on the SCP forum, writes:¹⁶

I recently had a conversation with an engineer in which GUTCP came up. He basically rattled off the

Wikipedia catechism about BLP. So I asked him how it would affect his worldview if BLP came out with a wildly successful commercial device base based on GUTCP. He didn’t say anything about questioning the theocratic structure of the “scientific” establishment. He said that it would indicate we were living in a simulation and that the system programmers were messing with us.

Then this comes out: Neil deGrasse Tyson Says It’s “Very Likely” the Universe is a Simulation.¹⁷

Perhaps the physics theocracy response to any real scientific revolution is take the mask off and start an overt religion that, basically, says the revolution was caused by demons or gods or the system programmers of the simulation in which we live.

QM has inspired quite a lot of quasi-religious discourse from its authorities. There is an entire genre of literature authored by QM authorities already talking about “consciousness” and QM in quasi-religious terms. It wouldn’t be much of a stretch for physics authorities to do what many if not most theologians always do when confronted with scientific advances.

Randell Mills responded:¹⁸

That is not hard to understand. All theoretical physics is based on computer modeling wherein the community has accepted that the models, no matter how bizarre, are reality. In fact, they create the reality with the modeling. So, it is not much of a flight of fantasy to go one layer higher and assume that they are part of the simulation that is simulating and thereby creating reality.

James Bowery linked to a tech story¹⁹ (“Tech billionaires convinced we live in the Matrix are secretly funding scientists to help break us out of it”) and commented further:¹⁶

Here’s what people don’t get about Silicon Valley: Its tech workers are now 75% foreign born and most of those are from India where Hinduism is the dominant religion. Hinduism posits that we are living in an “illusion” and that it is the highest aspiration to escape that “illusion.”

If people think Silicon Valley billionaires who aren’t Hindu are immune to this, they need to go through what I went through knowing, as I did, some of the founders, not only of Silicon Valley but of the computer industry itself extending back to Minneapolis and how they were influenced by literal gurus. One of them would get up every morning at 3AM to drive from Palo Alto to Oakland to meditate in a center for Siddha Yoga in hopes that one day he would meet Gurumayi Chidvilasananda, which he did and the next day related to me how awe struck he was by the power of the encounter. Among the things he related to me while working with me on a

project was that Earth was a being that had invited souls to incarnate in mass at this time to witness her (Earth's) "death."

If you want to stop the "illusion" you must stop "reincarnating" and what better way than to terminate all life on Earth? No life, no incarnation and no incarnation, no reincarnation.

I don't know what kind of influences have been working on some of these Silicon Valley elites, but one thing I know for sure: They're in way over their heads.

It may be important to consider at this juncture that interpretations of various human experiences have now been shown to be without physical basis. The Uncertainty Principle was an error arising from a wrong postulation. So, uncertainty is just uncertainty, not a law of nature. The problem is in ourselves, in our poor thinking, once again.

Does that mean that the human experience is without basis in reality? Of course not! Does that mean the human experience is real? Of course not! Empirical science begins with human experience, then applies testing, armed with logic to reason out what is real from what is experienced. This process has proven most challenging, and prone to error, but so what? Theories are proposed, then destroyed when demonstrated to be in irreconcilable conflict with data. That is, except sometimes, when politics or religion or both hold sway.

Getting the story of Mills requires a big investment of time because he has published so much material, and so much of it is very difficult to read for almost all people. Just getting the ideas straight is a challenge. I studied electromagnetics in college, and much more afterwards, and I cannot claim to understand GUTCP, by a long shot. Validating just the math is a major undertaking, and I know that people have been working on that, and found some errors, which are corrected. For such a large book, there must be errors expected. My impression is that those errors have not been serious. There have been no major revisions, only expansions.

It is not an overstatement to say that Mills has re-invented modern physics, essentially single handedly, and this is just inconceivable to ordinary smart people. Our society shifted away from the early ideals concerning self-reliance toward today's ideal of established group standards holding all power, as seen in the climate change consensus idea. The very idea that science is a democratic process, to be steered by majority rule, flies in the face of the long, long history of individuals making the discoveries, which then completely redirect the group activity (sometimes only after a period of persecution for unfortunate messengers). Groups are vital for progress, but when people put their minds together, the resulting groupthink, known for stupidity, then dominates all the individuals. This is why I feel so strongly about this. It is a technological breakthrough, but more importantly, I see it as a sanity breakthrough, the infrastructural decentralization of energy, leading into a vast scientific revolution and economic energizing. The value of the individual would be seen in a more realistic, and less politically driven, light.

There is a tendency among humans to come to an under-

standing en masse, of a situation, then see it in less than well-informed terms, as demon or savior driven for instance, then to over-react into some direction perceived to be imperative. Getting stamped into war is a good example. Here, those who used QM conceptual framework to add apparent scientific association to some idea of reality or observations apparently unexplainable within the classical physics paradigm are in a quandary. The "science" they were doing is suddenly just a quaint notion or some such. That would be a take-down of a lot of people conditioned to prestige. It would be viscerally rejected and blowback must be expected.

The shame is that whatever they were doing might have been very important science, if it was understood within GUTCP. The typical over-reaction would be to just make it look ridiculous. It is not today's scientist who is to be blamed for the less than stellar efforts made by scientists because they were interrupted by World War I. One who believed as taught in school will be blamed for an error not of his making, and it might be a loss to science. This is not a football game.

Science needs to realize, once again, that research often means going over plowed ground again. Sometimes, they do not get it right the first time, and the consequences of the error must be the subject of intensive research, in order to error compensate. First, leaders must come to grips with reality. Those who are unwilling to face it must be rejected. This is not an odd anomaly that a team of scientists need to find a way to adapt QM to fit. This is a wake-up call. It is noticing the emperor's nil clothing. The world has been trusting fools, however well-intentioned.

To be continued . . .

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About the Author

Wall spent 23 years working for the federal government, mostly doing field engineer work in RADAR and RADAR automation. His experience with instrumentation impressed Dr. Mallove, who hired him after learning about Wall's attempt at building a calorimeter for investigating the early Mills electrochemical work using nickel electrodes. His interest in anomalous phenomena was greatly stimulated and fed during employment with New Energy Research Lab, in the company of some very interesting and intelligent people. This was from 1998 to 2000. Wall is retired now and largely focused on understanding GUTCP.

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