Dawning of the SunCell®

Part 2 of a Series Investigating the Work of Randell Mills

Ed Wall*

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.

See Part 1 of this Series at: http://infinite-energy.com/iemagazine/issue130/WallIE130.pdf

It is a staple of science fiction: time travel. The typical suspense revolves around intrepid adventurers traveling back in time to try to change the outcome of some event that will eliminate that outcome from history that is ruining life in the traveler's own time. Skynet should not have been allowed to develop autonomy and dominance, for instance, so the hero played by Arnold Schwarzenegger saves the day, in the "Terminator" movies.

This raises serious ethical issues that are not usually faced in the realm of science fiction. If the original events change, the cascade of contingent and intertwined events must change as well. Reality must maintain continuity over time, because it is a space-time continuum. The lives of some, who have no say in the matter, would be terminated, or perhaps enhanced or degraded, because of no action of their own will.

We are facing a reality that is not fiction, but has similarities, particularly the ethical issues. The biggest difference is that this is not arbitrary, it is a reckoning, which informs some ethical concerns. There was a past time when there was no Quantum Mechanics (QM), but there was a serious quandary. Those authorities of science, the chemists and physicists, could not understand or explain what their experiments were telling them satisfactorily: in terms of a conceivable atomic physical structure and action, and cause and effect. Their long string of huge successes gave society such confidence in the value of human reason. Enlightenment stems from the realization that truth can be learned by strenuously and consistently exercising reason, and that method works a whole lot better than uncritically believing ecclesiastical authority. Eventually, as such human potential forms into practices, regulated academic behaviors and prestige patterns, priority focuses on protecting the established institutions.

It is hard for some to accept that the institutions that form then too often fail to maintain a strict priority on seeking the best understanding possible. However, this is what the history of scientific revolutions teaches. Institutional investments are expected to produce rewards, and the expectation of the reward maintains their existence and prestige.

It's an old story: vested interests exercising disproportionate or displaced influence, creating injustice. It is inevitable, but controllable. Controlling it is the story of human history, a voyage of us learning how we are, and how we could be, if we are willing, over and over again.

The brightest minds, doing their best work, started from some purely empirical expressions that could provide the Balmer series, but it was really no different than curve fitting. There was not much of a physical concept on which to hang bits of reality to produce the energetic states that were expressed in a light spectrum. I suppose it is really like losing touch with reality when your job depends on your being able to make sense of what you are sensing, and you cannot. Wolfgang Pauli was said to be looking especially depressed one day. When asked why, he said, "How can one look happy when he is thinking about the anomalous Zeeman effect?"

Anomalies are problems that hold great promise, and great risk to explore. Why is reputational risk such a concern? Is it because people generally fail to grasp how science gains, and cannot recognize it operating? Or, is it because to risk exploring what is not well understood is to risk arriving at an erroneous conclusion?

Governments try to turn science into a machine for war and predictable and controllable economic outcomes. Science does not care about such things because reality does not care about them, and real science is a way to strongly connect with reality.

Pauli also said, "The best that most of us can hope to achieve in physics is simply to misunderstand at a deeper level." This reveals an outlook one must appreciate. I doubt Newton or Maxwell felt such despair, humorous or not. Ernst Mach was not an academic philosopher, but he thought about it enough to explain the dilemma, and try to make sense. His thinking had a great influence on the philosophy and the path of science, for many decades.

One of the functions of being an engineer in my career was that when I got into a situation that was obviously devolving rapidly into something untenable while working to bring air traffic control equipment into service, I could blow the whistle. I didn't need to, because almost always, the threat to blow it was enough. People really want to do important stuff correctly, generally. They also like preserving their own skin. The priorities get skewed.

What if there was a whistle to be blown, an alarm to society that what has been developing in science is not to be taken so seriously, at least until we can figure out exactly if, where and why the train left the track? Is that not what

Schrödinger did by writing that quantum jumps were the modern equivalent of the epicycles of Ptolemy astronomy? So, what went wrong? Was it impossible for people to realize that society's greatest scientists were stumped? I don't know. Was it impossible for the stumped scientists to admit it? I doubt many grants have been awarded to scientists who were very open about their failure to know what they are doing. It certainly caused many of them anxiety.

What I do know is that one of the consequences of believing that the Grand Unified Theory of Classical Physics (GUTCP)[1] is correct may be expressed by imagining that Schrödinger's warning had been heeded. Is it not hard to imagine that work based on the work of Schrödinger, which fans out into many famous names, should be taken as wholly provisional. . .as a cautionary tale. . .as a reminder that when a postulation leads to absurdity, it is imperative to back up and reconsider carefully?

The great success of the application of the scientific method caused it to become enshrined above religious faith. The stumbling over atomic physics, the birth of QM, began to change that. This caused some to wonder if perhaps humans had become overconfident in their innate abilities to understand what is. Some considered that maybe direct logical contradictions are not really a problem. The joke is on us. Maybe we are at the mercy of a reality to which we cannot possibly adapt or apply reason, outside of our little bubble of macro-reality. What role does our ability to dream up stuff (*ex nihilo*) play in forming what we are experiencing as reality? Where does the dream stop and reality begin, exactly? Did we use the field of uprooted reality concepts left in the wake of QM to provide a blank canvas on which to play out unconscious psychological conditioning, imposed by more basic life motivations? Are we automatons adapting in accordance to what we became in the progression of life, through no actual decisions made? Is consciousness, this sense that one has existence in a state that is other than the body, which is explained as an epiphenomenon, an insignificant by-product of survival mechanisms doing what they must do?

Answers to questions like these are affected by the GUTCP, because determinism is no longer optional. That is, if any of what happens in reality is the result of causes that are not accounted with physical understanding of determinism, they require explanation outside of what is determined by the operations of what physical theory demands, to the points of its validity constraints.

Experience is divided into two types: what is known, and what is not. The line between is a frontier, shifting and undefined, personal and social, but there is a clear difference in the state of those two conditions of knowledge and experience. What happens when there is a significant shift in the frontier, when the unknown suddenly expands and you might feel like you would in an earthquake? You would not know, even in what way, that there is now a need to know what was not known to exist and you need to realize you no longer know things you believed you knew. This can cause panic, a rapid disorientation.

Imagine you are young Brett Holverstott. You think enough to understand that theories are in flux, you look around and see a very smart man who is making a lot of sense with his ideas and claiming to find reams of scientific confirmation. You examine his philosophical premises and find an island of scientific controversy that is still trying to tell us something, over a century after it started. The new theory is revealing the underlying discovery to be of penultimate significance. You are able to form a primary boundary line between known and unknown in an area of extreme value to you personally, and especially humanity generally, but it is all riding on how certain you can be about the correctness of the claims and the soundness of the theory.

What Holverstott did was to shape his education to be able to reach a degree of understanding of the situation with Randell Mills that more people need to have, but they fail to realize their need. Writing *Randell Mills and the Search for Hydrino Energy*[2] was his attempt to meet that need, in the way he learned it himself: philosophically, with solid grounding in chemistry and physics. If you do the work to understand what people were thinking about when they proposed ideas, you can understand the alternatives they faced, which can explain much about how certain decisions were made.

This understanding appears to be foreknowledge of great changes, some known and some not. The incentive for Holverstott to pursue a clear understanding was strong, and the environment of his college campus was conducive to fulfill his curiosity and gain understanding. His name appears on a number of Mills' papers, including one of special emphasis given by Dr. Mills during lectures.[3] He is a very credible witness, who is providing an incredible story, and fascinating explanations. How can his testimony be considered other than expert? (See Figure 1.)

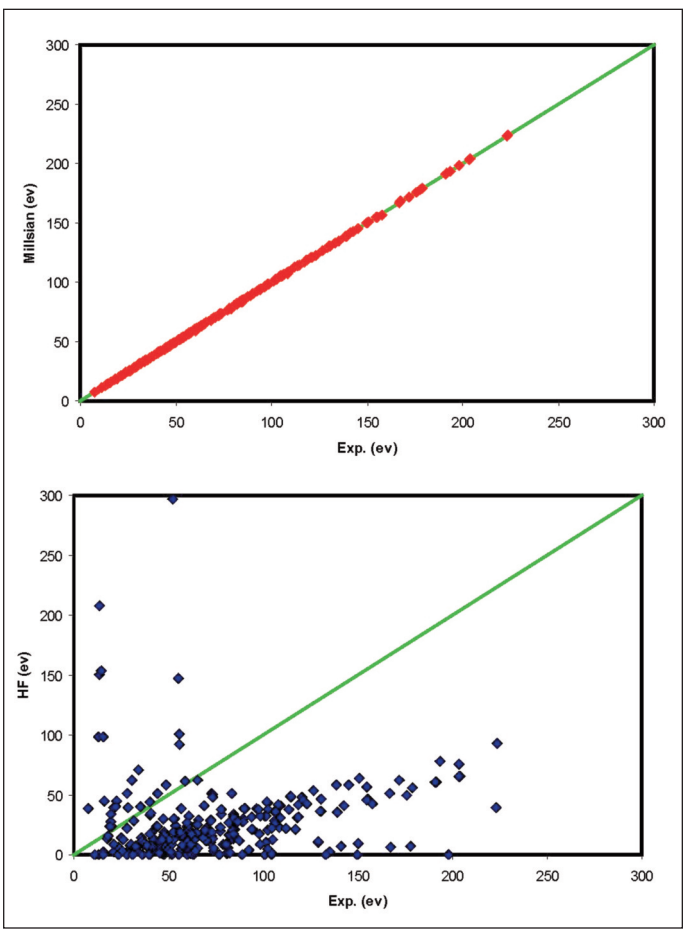

Figure 1. This shows the quality of the calculations made by Mills' software for determining analytically the physical qualities of molecules, compared to the QM product currently in use. [Courtesy of BrLP.][3]

Why did Holverstott become an architect? I'm not certain, but there is a moment described in his book when he realized that his reach should not exceed his grasp. He was looking at deep involvement in an experiment that would be a real technical challenge. This would take him into direct conflict with serious academic physics heavyweights. His thing is really philosophy.

The origin of QM was an operation interrupted, incomplete and incoherent. It reminds me of Sagrada Familia in Barcelona, Spain, a city of fantastic architecture. This is a very large cathedral that, it appears, the builders do not know how to complete. The design of the building takes unexpected and strange paths.

Society for Classical Physics (SCP) follows somewhat from a discussion group founded by NASA engineer, Luke Setzer, the Hydrino Study Group (HSG).[4] I was not a participant, mainly because I did not believe I was capable of making the commitment to take the study of GUTCP seriously. Electromagnetics was not an easy physics course for me, and electromagnetics is kindergarten in GUTCP. My admitted lack of understanding of QM would actually not be an impediment.

There has been much opportunity for educated individuals to form well-informed scientific opinions about GUTCP. I expect that with this opportunity, pursued by quite a number of highly educated scientific thinkers, as well as a broad mix of the curious, there would be some pages of fully-baked criticism of Randell Mills' claims that I could find. What I find is Wikipedia, which is a collection of half-baked or less opinions from recognizable talking head scientists. I suggest the reader visit, just to understand the situation.[5] The only formal criticisms that I have seen were rebutted in a way that reveals that the critics were invoking QM as foundational to disallowing basic concepts of GUTCP. This is what is known as a "turf war." If discussions concerning science are not about the science, but about what authoritative people believe that people are supposed to believe about science, then it is politics wearing a science face.

There is a recent minor victory against Wikipedia. Hydrino energy is apparently no longer classed with "free energy" devices, something it was not claimed to be.

There was some recent discussion about evidence for Hydrino existence and the challenge of collecting Hydrino gas. Dr. Mills replied:[6]

> We trap the $H_2(1/4)$ gas in crystalline defects and now carbon. $H_2(1/4)$ has about $1/64^{th}$ the volume of H_2 which is very diffusive; so, containing the gas over containment gases is difficult. Demonstrating a physical property such as a boiling point is difficult since the gas has to be essentially 100% pure; otherwise, there is no clear boiling point. Moreover, non combustibility is not definitive since N_2 is somewhat inert, and argon on the reaction gas does not burn either. The argument shifts to spectroscopic identification.
>
> Hydrino ionizes to H^+, the same as H; so, only the ionization potential distinguishes hydrino over contaminate H_2 using mass spectroscopy. But, the H^+ current from ordinary H increases with ionization potential as well. Moreover, NMR, XPS, inverse Raman effect, Raman, FTIR, Photoluminescent spectroscopy, e-beam spectroscopy, TOF-SIMs, etc. are very difficult or impossible with a gas sample. Since $H_2(1/4)$ has uniquely high energy signatures, it can easily be identified in the presence of H_2 using the extensive number of techniques that we have published on. These techniques demonstrate properties such as ro-vibrational and ionization energies that are characteristic of and identify hydrino. We have proven hydrino spectroscopically. It amazes me that the scientific community has not engaged.

I suggested on SCP that dihydrino molecules could substitute for helium molecules in lifting bodies, such as blimps, except for the extreme permeability of the tiny dihydrino molecules. Someone will prosper to invent an elastomer balloon material that is impermeable, probably made with Hydrino chemistry.

There are plenty of papers listed on Holverstott's website to attest to the extensive Hydrino characterization efforts,[7] reported data said to be in close accord with the GUTCP-based model, they "are characteristic of and identify Hydrino." So, is there a response to this astonishing published data from the scientific community? Mills says not a lot of response very openly. One recently asked why they were not working with Princeton, with whom they share a zip code. The answer is much like it is for cold fusion. Scientists are impressed with what they are seeing, but they do not wish to be known for their curiosity or opinions, quite often. One scientist recently suggested a technology using thermopiles to measure what would be expected with the rate at which a gas can conduct heat, in order to differentiate between Hydrino traffic and ordinary hydrogen ("integral hydrogen," perhaps?). If this works like I expect it would, the elusive Hydrino will leave a repeatable and predictable impression, detectable with inexpensive technology. The scientist pushed Mills a bit to make him promise to give him credit for the idea, wanting to catch a little notoriety or an intellectual property claim.

It might be a long shot, but if it turns out to be a better way to make that measurement than anything else, and that measurement becomes useful (not hard to imagine), the scientist might have a nice claim.

Ben Franklin said, "He that would live in peace and at ease, must not speak all he knows, nor judge all he sees." Scientific discourse is a place we like to believe suspends penalties laid on lay people for thinking and observing enough to be potentially disruptive. It is also where we like to think power and money are not at play. The winners write the history, and it is because they own enough of the historians, or the foundations that funded their teachers' educations.

Sudden Popularity

There is something afoot. An article by Stephen K. Ritter was posted on the *Scientific American* website in late November.[8] The article first appeared in *Chemical & Engineering News*, reporting the decades of persistent data of excess heat. When it appeared on the home page of the *Scientific American* website, it surprised a lot of people. The article is unremarkable, except for noting the incongruities of it. It is mostly about Randell Mills, despite the title. He has always stood in opposition to a solely nuclear explanation for the excess heat, and who can blame him after the results published in his Ni/light

water electrolytic cell paper published in 1991? Cold fusion (LENR) suffers from lack of theory. Yet, it is hard to ignore the nuclear anomalies—massive data like the Bhabha Atomic Research Centre's spontaneous replication burst of tritium production in 50 separate groups, and three labs at LANL.[9]

In fact, the solution to the missing neutrino problem is solved with GUTCP, along with the anomalous coronal "temperature." The case seems very solid, as explained in a talk given by Brett Holverstott at a pleasant gathering at Jon and Suzy Apple's house.[10]

What Hydrino science is revealing is that the extremely energetic particles in the corona are explained well as the product of Hydrino production. The presence of carbon monoxide is impossible if the temperature corresponding to the measured other particle energies is real. This is reminiscent of work done at the University of New Mexico under contract from BLP, where anomalous line broadening was reported. Coronal radiation fits Hydrino spectroscopy and the extra energy produced by this reaction would explain why there are no missing neutrinos, after all. The energy of the sun is both nuclear, producing neutrinos, and Hydrino, in proportion determined by the expected (solar radiance) and measured neutrino counts (nuclear reaction rate). This eliminates the need to imagine a new property of neutrinos that makes them impossible to reliably count, which helps because the pursuit of this property of neutrinos has not borne fruit. Count that as another major score for GUTCP.

So, did the article published in *Scientific American* mention any breakthrough evidence? Not hardly. It appeared to me to be an extended exercise in plausible deniability and ass covering. What would it be like to be the editor of the magazine when SunCell® is introduced and you failed to even mention it, *a priori*?

The article was largely based on an interview of a pharmacist, a well-schooled chemist who has been interested in Mills' work for a long time. This fellow maintains his skepticism, as we discovered in some friendly exchange on the SCP with him. His standards for accepting Mills' claims and theory are very high, although he would like to believe them as much as anyone. He would like to see Hydrino gas captured for analysis. Hydrino has been captured in getters used in the evacuated reaction chamber and analyzed using XPS, NMR, inverse Raman effect, Raman, FTIR, photoluminescent spectroscopy, e-beam spectroscopy, TOF-SIMs, etc.,[6] which would be sufficient evidence for most objective scientists, but the difficulty in capturing Hydrino gas is a problem to this fellow. Hydrino molecules are very much smaller than helium, which permeates out of containers.

It is fine that this pharmacist has such high standards. His persnickety approach appealed enough to the author, Stephen Ritter, to use him as a primary source. This allows Ritter to deflect any criticism he may receive for hinting at infidelity regarding QM. He did not mention the vast evidence supporting Hydrino existence. He focused on a guy who focused on evidence that cannot yet be obtained. Then, rather than write their own article, despite their considerable resources, *Scientific American* chose to simply republish the original article, providing another layer of plausible deniability.

The Unspoken Reason that GUTCP is So Hard to Accept

Simply this, if something this strange and unorthodox is true (true in an ordinary sense, not some remotely abstract way), then how did we manage to arrive where our ideas are in such a strained relationship to reality? What do we do about it? What can we do about it?

When things are the object of belief, they seem more real than they are. The reason money is money is because people believe it is. Serious power is created with belief, which accounts for why the priest class in all human societies is so ancient, pervasive and powerful. When the belief is of a group, the experience of the similar perception of the object of belief is a sharing. Group identification grows over generations, making cultures that are incompatible with groups founded on different beliefs. For generations, we were influenced by ideas praised to be a pinnacle of science that were as strange as angels dancing on the head of a pin. Quantum mechanics started as an unsolved math problem and became a religion. Discovering this is a real shock to the system. Somebody really solved the problem. Oh, no! Now what?

It's a good shock, like the sail finally leaving the water and catching some air as the capsized ship rights itself. We will be experiencing the effects of ideas developed into actions put into motion by Dr. Mills long ago.

This all is not apparent when one is first acquainted with the hardness of the case to be made for Hydrino science. If events proceed on schedule, a massive number of people will be suddenly aware of the breakdown in basic physical orthodoxy, a major shift. I have to believe this will have a huge positive impact, but unpredictably. I tend to see the ensuing chaos as good in that it will reveal to people things about their society that are usually hidden by the modern priest class, the orthodox scientists (some in white robes, some in black robes).

Is Dr. Mills the Only One?

Have other people doubted that the postulated ground state of hydrogen is really the zero point? Yes, although this writer does not pretend to be adequately informed on the matter. It is not a surprise that people wondered about orbitals closer to the nucleus than ground state, "forbidden" by QM. "Electron capture" is a topic of modern physics, where the electron somehow gets to the nucleus without going there across the forbidden zone, just as it makes quantum jumps between orbitals, never existing in between stable states. It is just a matter of discontinuous, mundane magic. Any questions?

What is most impressive about Dr. Mills is not that he can repeatedly make very abundant energy from hydrogen. It is not even the SunCell.® It is the GUTCP, because it was that theory that told him that fractional orbitals (orbitspheres) exist, and the predictions have borne fruit, over and over again. In the long term, the greatest thing about GUTCP is that it restores the place of human reason by obviating QM. The need to get past QM has been recognized by some scientists in the mainstream from the beginning. An article appeared in a 2015 edition of *Nature*, entitled "What is Really Real? A Wave of Experiments is Probing the Roots of Quantum Weirdness."[11] The first sentence reads, "Owen Maroney worries that physicists have spent the better part of a century engaged in fraud." In other words, QM is not just a little incorrect, requiring some modifying, as some maintain.

Dr. Mills was the first to correctly solve the electron properly. His work is not curve fitting. It does not have "basis sets" (collections of arbitrary parameters). It has no arbitrary

parameters. There is no doubt some merit to the work of other scientists, but the extremely important work of setting such fundamental physical theory straight cannot be overemphasized. This work re-contextualizes modern physics totally. Any work expressed in the parlance, in the concepts, of QM must be re-evaluated. Would you keep your money in a bank that had failed to adopt the use of computers? This is a flawed analogy because QM is like a calculating machine that gives some good answers only sometimes. GUTCP is much more than a reliable calculating machine. It is a vision of reality that tightly corresponds with actuality.

"Those who can make you believe absurdities, can make you commit atrocities." – Voltaire

To be continued . . .

References

1. Mills, R. 2015. *The Grand Unified Theory of Classical Physics*, BlackLight Power. Available for download at: http://brilliantlightpower.com/book-download-and-streaming/

2. Holverstott, B. 2016. *Randell Mills and the Search for Hydrino Energy*, KRP History.

3. Mills, R.L., Holverstott, B., Good, W., Makwana, A. and Paulus, J. 2010. "Total Bond Energies of Exact Classical Solutions of Molecules Generated by Millsian 1.0 Compared to Those Computed Using Modern 3-21G and 6-31G* Basis Sets," *Phys. Essays*, 23, 153; doi: 10.4006/1.3310832

4. Society for Classical Physics Forum (SCP), https://beta.groups.yahoo.com/neo/groups/SocietyforClassicalPhysics/info

5. https://en.wikipedia.org/wiki/Brilliant_Light_Power

6. Mills, R. SCP forum, November 20, 2016.

7. http://www.brettholverstott.com/annoucements; scroll down to the July 21, 2016 entry "Accountability" for a list of papers.

8. Ritter, S.K. 2016. "Cold Fusion Lives: Experiments Create Energy When None Should Exist," *Scientific American* website, November 28, https://www.scientificamerican.com/article/cold-fusion-lives-experiments-create-energy-when-none-should-exist1/#

9. http://newenergytimes.com/v2/archives/1989BARC1500Report/1500.shtml

10. http://www.brettholverstott.com/annoucements/2016/12/9/video-of-november-12th-talk

11. Merali, Z. 2015. "What Is Really Real? A Wave of Experiments is Probing the Roots of Quantum Weirdness," *Nature*, 521, 278-280, May 21, http://www.nature.com/news/quantum-physics-what-is-really-real-1.17585

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.

*Email: rdde55@gmail.com

Brilliant Light Power's SunCell was featured by CNN on January 1, 2017. See the report at:

https://www.youtube.com/watch?v=siHCRp7TpoU