The Physics Paradox

By: Clark M. Thomas

Abstract

The physics paradox demands we perceive the real physics and astrophysics outside stale paradigms. Deep problems within experimental physics are mostly dimensional and conceptual. Elegance requires a clear view of foundational physics, which will lead soon to the resolution of supersymmetry. Experimental physicists may contend that whatever theoretical physics has not yet been verified, or deemed verifiable, is not science. For an elegant modern physics to emerge, science must realize our mutual limitations.

For over a century physics has been stuck within a correlative, but hardly causative, spacetime model for gravity. The antique GR model has led to fundamental errors regarding real general relativity (lower case). Confusions are also found within other common models, such as dark energy, dark matter, wormholes, hyperdimensions, and what goes on inside black-hole event horizons. All of these unresolved ideas within stale paradigms can be resolved soon within a more elegant perspective.

To complicate matters, physicists everywhere misunderstand what goes on within the sub-Planck dimensions. For example, experimental physicists have long dealt with competing quantum

theories. Serious issues between favored quantum field theory and the real general theory of relativity yield their own opaque physics paradox. Even the blind Sufis could understand their mutual elephant better.

Here is a definition of **paradox** from the New Oxford American Dictionary, which Apple supplies:

> "…a statement or proposition that, despite sound (or apparently sound) reasoning from acceptable premises, leads to a conclusion that seems senseless, logically unacceptable, or self-contradictory: *a potentially serious conflict between quantum mechanics and the general theory of relativity known as the information paradox.*"

Some experts attempt to minimize other perspectives using a science version of 1920s **logical positivism.** Certain German philosophers looked down on competing philosophical theorists as producing *ideas that are unverifiable, and therefore meaningless.* For a while this line of attack was dominant, until it was shown that the entire edifice of logical positivism is itself meaningless.

Truth is, no one perspective is pristine. Both theorists and experimentalists are stuck within their limited envisioning, and within their limited powers of objective verification. The way out of this dilemma is to embrace limits as a floor, not a closed door. There is still much to be learned from limited powers, as long as we are hypothetically honest, and we properly use both deduction and induction.

Things that limit experimentalists also limit theorists, at both the edges and cores of their models. Only by understanding the **Venn diagrams** associated with these primary differences can we reveal potential synergies and opportunities for clarification. A Venn diagram is defined from the same dictionary source as:

> "a diagram representing mathematical or logical sets pictorially as circles or closed curves within an enclosing rectangle (the universal set), common elements of the sets being represented by the areas of overlap among the circles."

I have harmonized seemingly unresolvable dilemmas in some of my other essays within the "Clark's Web Pages" section of my site, astronomy-links.net. Human brains have about 100 trillion brain synapses. It is time to synergize our mental potential with wisdom. Physics should be fun, not a win/lose battle.

Opportunities for Discovery

Even though there are some technical and theoretical areas where a coming-together of sorts can be created, there will always be areas where human technology for testing certain theoretical hypotheses can never be fully developed. What then? Do we declare things we cannot verify to high levels of certainty to be "meaningless" science fiction, or even science fantasy? Or do we look creatively for ways to narrow the gap between clever speculation and impossible full verification?

The greatest problem for unification toward a working theory of everything is dimensional: The logarithmic linear dimensions for actual fundamental physics units (not weird zero-to-infinity math) range from about 10^-38 meters below human body size, to near or beyond 10^28 meters for the outer 4D multiverse of local universes. That's a huge logarithmic linear dimensional range.

The linear dimensional difference between a human and one atom is about fifteen logarithmic powers of ten meters. The difference between one atom and one smallest physical/energy unit is about 23 dimensions. In other words, human bodies are much closer to the size of individual atoms – than atoms are to the size of individual yin/yang matter/energy spheres.

The difference between one yin/yang matter/energy particle, and the outer regions of the multiverse of universes, is some 68 logarithmic dimensions. Think deeply on that.

In 1915 Albert Einstein did not know the real range problem, and minimized the photon acceleration phenomenon. He thus developed a reverse-engineered spacetime theory that only correlates with proximal physics (atoms-to-visible universe). Until the mid-1920s science thought of the Andromeda Nebula as just that, not a nearby gigantic galaxy. Data which appears to be correctly causal can be seen as absurd within a better context.

Scientists should never quit creating better data hypotheses, including those that cannot seemingly be fully verified, except within the limited range of our measuring skills. Coherent scientific hypotheses must always be about refining knowledge of "known probabilities" within unknown total possibilities.

If the verifiability principle were 100% enforced, then all of science would fail the ultimate dimensional test. However, the **philosophy of the as-if** comes to our rescue when we apply the idea of using our increasingly "best guesses" to develop superior theses. From a practical basis, we humans can do marvelous things while not being fully informed, and working with what we have that correlates with what we think we can measure. The physics paradox is therefore operationally resolved along an unknowable curve.

Voltaire said the perfect is the enemy of the good. While the physics paradox is easily managed within the as-if science model, there is little incentive to go from the goal of perfection to the goal of the good. When a defective antique model is reinforced with big cash and public favor, the real quest for Truth is often sidetracked. Taxpayers like to pay for the chase, not the catch.

Greed with secular power is the hidden but obvious culprit. This evil is why theocrats almost burned Galileo at the stake. It is also the reason why big science likes to crush all competitors.

There is always hope for global Wisdom to emerge in a timely fashion. We humans have very precious time to restore sanity to proliferating nuclear militaries within a rapidly imploding global ecosystem. Thus is revealed the great paradox that supersedes all others on blue planet Earth.