

Strong and Weak Correlations

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Abstract

Strong and weak correlations are similar to strong and weak probabilities. Correlation is sequentially linked to experimental physics and hypotheses. Theoretical math probability can also be estimated without causative constraints, within virtual data points. Dictionary definitions could be parsed, but the statistical separation between strong and weak experimental anything cannot be ignored.

[In January of this year I wrote an important [essay on the good and the perfect in science](#). This newer essay harmonizes with parts of the earlier thesis, but demands its own perspective. I recommend that you read both this one and the earlier essay.]

The difference between science and organized religion is in how science tries to know truth. Religionists don't worry about geeky scientific methods, because they believe their Bronze Age sources are revealed and infallible, or even dictated by omnipotent God.

With most religions, deep questions are ultimately answered by "God did it for us." Some critical questions are also answered by "It's a mystery." Tricky verbiage can deflect unverifiable problems within rigid theology, keeping religious dogma intact. Twisted theology can also get very interesting, such as when the Vatican Observatory was situated on a mountain in SE New Mexico to celebrate God's singular Big Bang. Here is backward-focusing science at its goofy best, where conclusions precede questions.

Hard causative “proof” is beyond the reach of experimentalists, yet still within the realm of logically assisted coherence. Many “true believers” think their irrefutable version of the God thesis from the Bronze Age must be infallible truth. Is the flat Earth really 6,000 years old? Who needs experimental science? The scientific method only gets in the way of divine design.

Let us explore how we Earthlings can quickly move toward a survivable Anthropocene future. Antique theology that promotes pillaging our environment cannot help; but theological respect for global consciousness could synergize ameliorative technology. Thinkers need to accept that we cannot logically eliminate any coherent mystical realm. Amazingly, the ubiquitous mystical realm (named by some Buddhists as *myoho*) is where faith and science can honestly meet. When people belatedly realize that ancient superstitions are no longer functional across a modern world rapidly spinning toward chaos, there unveils new space to appreciate *myoho*, the realm where we can all converse honestly.

Strong and Weak Correlations

When is correlation enough to establish strong causation, the base of evidence that supports all experimental physics theories? Scientists like to point to better dimensional “keyhole data” within LHC particle physics, and to other seemingly hard results. How are “strong” correlations actually strong, if we are only exploring the middle range of logarithmic physics? In other words, how can we create clear probabilities when we only know some proximal numerators, and not the full range of denominators?

The operational ideal emerges where a “strong enough” weak correlative hypothesis gives comfort to proceed. In contrast, everything can appear “too clear” from within a physics cloud castle, where the dimensional ground we claim is not the real physics ground for the phenomena we measure. If there is no way to perfectly correlate measured phenomena with real basal causes, then no amount of seemingly strong precision can yield a verifiable high probability for universal use.

Back before scientific instruments such as Galileo's telescope, it was easy to rely on our eyes and simple geometries to "prove" the validity of Ptolemy's celestial sphere, and to show that the Earth is indeed flat. There were no modern ideas of atomic and subatomic particle physics, or even four dimensions and visible universes. It was therefore easy to enforce theocratic authority by burning physics heretics at the stake.

Humans are always *as if* inside a totally dark box, where we think we know where we are, but don't know what else is in the box with us. This data box enclosure is even darker than Plato's Cave. Here is a pure metaphor for not being enlightened.

Modern thought still has the Ptolemaic problem, though in less obvious ways. Ptolemy's circles-within-circles model lasted for some 1,200 years. Modern astrophysics during the past century does better, but is still stuck with an insufficiently general version of general relativity. General Relativity is precisely why anything cooked up within the physics cloud castle will never yield a pure Theory of Everything, or even a Grand Unified Theory.

Experimental physics has long been aware of our paradigm deficiencies, as it wasn't until 1930 that the first tiny virus was detected. It was only in 1676 that bacteria were seen and factored into our view of life forms. These venerable discoveries of microscopic beings cannot yield the precision we need to envision the truly fundamental elements that constitute the real ground below our floating cloud castles.

It has been said that if you truly know all about one thing, you can with induction know everything. If you know everything, you can with deduction look inward to know all about any one thing. We humans are consciously closer to the small than to the large, but only within linear dimensions close to our own, not within the full range of logarithmic dimensions. Thus, we potentially know very little about any thing, even with our best science. However, quality hypotheses do help minimize our ignorance, and allow us to proceed experimentally as if we really know the basics.

Individual *yin/yang* Coulombic EM spheres are at about the 10^{-37} meters level. Pure mathematics can go infinitesimally smaller toward absurd zero size, which would be $10^{-\infty}$ meters. Again, we are talking about useful real physics, not mathematical games. In other words, for progress we need to scientifically live within causal hypotheses, not imaginary math correlations.

The difference between *yin/yang* individual particles and our everyday existence is about 37 logarithmic dimensions of ten meters. The difference between everyday human existence and likely outer limits of the multiverse of visible universes could be about 28 logarithmic dimensions. Therefore, the full dimensional distance between the very smallest and largest physics entities is about 65 logarithmic dimensions, all within the 4D multiverse.

Pure math can imagine that the macro difference could be an infinite number of logarithmic dimensions in either direction between us and the infinite 4D multiverse – but that is totally meaningless and absurd within experimental physics. One version of goofy math string theory proposes 10^{500} entire universes, of which our local 4D universe is just one.

Another way of visualizing some of the smallest and largest regions of reality is to consider what we might see of Earth's buildings from orbit in the ISS. We can telescopically see some structures, but not their individual bricks. As for people on the ground, we can image with military instruments some individual humans, but nothing molecular or atomic.

Ironically, each human body from the relative perspectives of its smallest internal living units would seem like an existential universe unto itself. There are trillions of cells, bacteria, and viruses composing each human body. All the other humans could seem like a "humankind multiverse," from a viral perspective. Imagine the obscenely large number of sentient living units within the entire multiverse. Living units assemble themselves, and aggregate from foundational individual *yin/yang* units. Life creates its own existential values, and not just among humans.

Atoms in pre-scientific ancient Greece were properly defined as the smallest indivisible units. Actually, real atoms are indeed much smaller, virtually indivisible, units than today's atoms. They are called *yin/yang particles*. The key difference is that modern atoms are generally in the 10^{-15} m logarithmic dimension; and individual *yin/yang spheres* (which eventually make up atoms) are around the 10^{-37} logarithmic dimension. That's a difference between divisible complex atoms and their real atomic units of about 22 logarithmic dimensions. [Particle accelerators](#) probing midrange linear dimensions cannot bridge the gap, because Coulombic EM attractive forces increase inversely and massively with diminished separation approaching the sub-Planck realm.

The relative difference between individual yin/yang units and individual humans is therefore about 37 logarithmic dimensions. The difference between everyday humans and the limits of our local universe is thus about 26 dimensions, and about 28 or 29 logarithmic dimensions for an intact multiverse. *Our full bodies are "dimensionally more close" to the most distant regions of space, than we are to the fundamental units within our bodies.*

This all seems weird, until we recall that our measuring tools of preference operate within a small range of the electromagnetic spectrum, using photons with waves too large to resolve sub-Planck units, and too long in frequencies to penetrate beyond our "visible" universe. In contrast, access to high EM frequencies could allow us to [clearly see inside so-called black holes](#).

One human brain has about 100 billion neurons, and each neuron has about 1000 synapses with other neurons. That means our everyday brains have the awesome potential of 100 trillion synaptic connections. Think of the untapped possibilities within even one human brain. Now envision those 100 trillion cranial synaptic connections in each brain interfacing with many of today's 8 billion other individual human brains. Throw in all the other interfacing sentient creatures within our ecosphere, and even include all the other possible synaptic interfaces among Earth's sentient intelligence and extraterrestrial consciousness.

Within this matrix ideas of an Olympian gang of quarrelsome anthropomorphic local gods on top of a mountain in Greece is beyond quaint; and likewise for other Bronze Age ideas of jealous tribal sky gods. Nevertheless, if local divinities are finite in possibilities and number, yet partially verifiable through objective causation, not just math, then such local "divine" entities could be weakly factored into local equations. Nevertheless, finite humans can never place a strong or even weak correlation estimate onto the mystical totality which is beyond all our ideas of the beyond, which is *myoho*.

Understanding Myoho + Renge = Possible Wisdom

Both words, *myoho* and *renge*, are well known in some Asian religious philosophies, but virtually absent from Western models. Briefly, *myoho* (*me-yo'-ho*) is the unknown unknowable. *Renge* (*ren-gay*) is the simultaneity of cause and effect. Together they provide a guide for the pursuit of deep knowledge and wisdom.

Without some sort of elegant hypothetical link between the possibly knowable and the unknowable, all is absurd. We have already touched on how *myoho* renders anything other than pure math moot in an absolute sense. Some sort of physical data is required to focus our experimental hypotheses.

There is a linking term that provides the methodological yellow stop light (neither red nor green). It comes from the neo-Kantian German philosopher, Hans Vaihinger, who described in 1911 the *as-if*. Even when we cannot achieve a strong correlation of causation, we can move forward with increasingly sophisticated hypotheses *as-if* we at least have a weak causation.

The paramount example of relying on this clever gymnastics is 1915's General Relativity. With GR math we have seemingly strong correlation for a weak spacetime model which fails to achieve anything like a Grand Unified Theory along all physical dimensions in the 4D multiverse. I myself have disproven the causality of spacetime branes and voodoo surplus dimensions.

GR is a fat target that's easy to refute and replace with the 21st-century version of push/shadow gravity: Real gravity within the actual 4D multiverse emerges. Dark Matter in various forms likewise appears. Dark Energy is shown to be a measuring error. Ironically, for limited intermediate dimensions, GR math is "good enough" to operationally imitate real gravity.

Any physics theory worth its claim to credibility must be able to unify the whole dialectical range of phenomena from smallest sub-Planck "quanta," up to the largest multiversal scales. Even though the largest linear dimensions are dialectically composed of the smallest causal units (individual yin/yang spheres), we hardly need to know everything about their energy/matter dialectics in the bi-directional progression to-and-from smallest-and-largest.

Additionally, the more we factor in simultaneous *rengé*, the more close we come to envisioning how the smallest units of dialectical energy/matter Coulombically and hyperluminally can interact. We thus increase our wisdom regarding the [partially understood differences between quantum and classical](#).

Within juxtaposed *rengé* in the smallest dimensions we are not always dealing with limited photon emission-acceleration and resolution, nor to photonic temporal perspectives. This is the actual unity of cause and effect. We can more easily envision elegant correlative and causative possibilities, as if verifiable to science, which is an honest start on the long path to physics Wisdom.

