

Towards The Second Copernican Revolution

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Introduction

Since Humanity developed some level of consciousness, we have developed narratives¹ that seek “unification,” perhaps because existentially, self awareness entails some sense of internal separation.. Today, we are deeply fragmented: seven billion people; 22 major religions and perhaps 4,300 others²; approximately 200 countries; with 46 current ongoing conflicts,³ 250 wars since World War II,⁴ and 26% of the American population with a mental disorder.⁵

I suggest that one way for humanity to steer the future is to intentionally establish a new cohesive global philosophy to address our fundamental challenges of income disparity, disappearing natural resources and environmental degradation. Since it has been said that “to change the world we must change ourselves,” I suggest that this community can take a leading role in building the global community.

This solution is in two steps. First we should emphasize the commonalities between narratives. I suggest the commonality is a shared goal - unification - and further, that, since all narratives have unstated premises and assumptions, all narratives - including theoretical physics - are faith based practices, with a difference only of degree.⁶

Second, I suggest we should expand our current science based narrative to eliminate the “embedded ego perspective.” Smashing the ego perspective will provide the “missing link” to our current understanding of the cosmos.

I further propose that we should adopt an “Uncertainty Index (UI)” that quantifies the raw and relative number of assumed values in calculations used by scientists, to provide intellectual honesty and transparency to their conclusions.

¹ by narrative I refer to any explanatory system that seeks to explain origins and human role in the cosmos, including and not limited to religion, tradition, ritual and theoretical sciences (physics and astrophysics).

² National & World Religion Statistics, 2014 <http://www.adherents.com/> (18 April 2014) See also "List of Religions and Spiritual Traditions," in *Wikipedia: The Free Encyclopedia*; (Wikimedia Foundation Inc., updated 17 April 2014, 3:01 UTC) [encyclopedia on-line]; available from http://en.wikipedia.org/wiki/List_of_religions_and_spiritual_traditions; retrieved 18 April 2014.

³ “Armed Conflict Database,” *The International Institute for Strategic Studies*, 2014, <http://acd.iiss.org/en>; (12 April 2014).

⁴ “How to Stop the Fighting, Sometimes”, *The Economist*, November 9, 2013,

⁵ The Numbers Count; Mental Disorders in America, *National Institute of Mental Health*, <http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml> (18 April 2014).

⁶ To be clear, I am referring to our cosmology of origins, the big bang, or its variations, and not direct observable description of our immediate physical world.

Unifying Theories

Since “Humanity” developed self awareness, we have used explanatory systems to quantify our place in the cosmos. To communicate these ideas, we developed symbolic systems. Early symbolic systems utilized physical objects. The first paintings so far discovered are The Cave of El Castillo in Spain and date to approximately 40,000 years old, and The Chauvet Cave in France, dating between 30,000 and 33,000 BC. It is undetermined whether the cave paintings were used to communicate specific content (such as the location of needed resources or enemies), or whether they are mere art.

A number of other symbolic systems followed that are believed to communicate content, such as petroglyphs (20,000 BC), pictograms (10,000 BC) and hieroglyphs (3200 BC). “True” writing systems followed, starting around 1400 – 1600 BC with Linear A and B, Sanskrit and others. An a great flowering of written content starting around 1000 B.C.

Numbers and mathematics as a symbolic structure to describe reality took root in 1687 with the publication of Sir Isaac Newton’s *Mathematical Principles of Natural Philosophy*.

Generally, humanity strings various symbols, whether letters or o’s and l’s, to form words, algorithms, to communicate ideas. We broadly categorize these as philosophy, tradition, religion, ritual, of science. The core of these narratives is perhaps to connect our abstract inner world with the external world, and greater reality.

Significantly, the word for religion arguably means “to connect.”⁷ Similarly, many western seekers are adopting yoga, in part, because the word means literally “to yoke,” more commonly understood as “union.”⁸

Theory is derived from greek *theoria*, meaning “to speculate,” which in turn is derived from “*theorein*.”⁹ *Theorein* can be further broken down with a root of “*Thea*.”¹⁰ *Thea* is the feminine form of *Theos*, or God.¹¹ While controversial, arguably, Theory, then, derives form “to see God,” or “the divine” or “the light” depending on your personal interpretive palette.

Regardless, some examples of unifying theories: Second Coming; Missing Link; Unifying Theory; and currently, a desire for Singularity. And, not to be left out, is our search for “The One,” our romantic partner.

⁷ “Ligare” “bind, connect”, probably from a prefixed *re-ligare*, i.e. *re* (again) + *ligare* or “to reconnect,” *Online Etymology Dictionary*. 2014. <http://www.etymonline.com> (18 April 2014)

⁸ “yoga.” *Merriam-Webster.com*. 2014. <http://www.merriam-webster.com> (16 April 2014); see also *Online Etymology Dictionary*, 2014 <http://www.etymonline.com>, 2014 (16 April 2014).

⁹ “theory.” *Online Etymology Dictionary*. 2014. <http://www.etymonline.com> (18 April 2014)

¹⁰ R.N. Rodowick, *Elegy for a Theory*. Harvard University Press, 2013. P. 8.

¹¹ “Thea.” *Online Etymology Dictionary*. 2014. <http://www.etymonline.com> (18 April 2014)

Limits of Perception

I suggest that the desire for a unifying theory or experience is projected from our limited perception, and desire to connect with others. We are limited to 5 senses. But we know that there are energetic frequencies far in excess of what we can see, hear, smell, touch or taste. For example, we know that particles are whizzing by as we read this. Some are solo particles, and others join to comprise electromagnetism, ultraviolet or infrared waves. Further, the earth is rotating in at least 3 different directions as we speak (4 if you believe in inflation and expansion), yet we do not perceive this. And assuming that our local system is rotating in a similar fashion around the center of the Milky Way (which we have not quantified yet), and that perhaps the Milky way is rotating around some unknown center, then we are spinning in perhaps 12+ different directions at once - and we have no direct experiential knowledge of this.

Since we know as a fact that our perception is limited, then it can be said that consciousness arises from the limiting and separation of energetic inputs, like a prism. Instead of “we the expected,” perhaps it is “we the incomplete,” hence our search for unification, sometimes in tall the wrong places! Instead of being the smartest species ever to grace the earth, perhaps we are actually the most limited and naive, because instead of intuitively experiencing wholeness and completeness, we are constantly seeking to explain ourselves and our place in the cosmos via art, music, literature and science. Dinosaurs lived for some 300 million years, other microbes have been here for billions. Lets say humanity arose about 40,000 years ago since the first cave painting were discovered, and lets say that survivability is the metric instead of iPhone apps - we have a long way to go to prove our merit.

Out of Chaos

According to the Ancient Greek origin story found in Hesiod's *Theogony*,¹² the Cosmos originated out of Chaos. We interpret chaos as “disorder¹³” But the word in Ancient Greek means, “abyss, gap, void.¹⁴” And since cosmos means “order,¹⁵” the paradox that we interpret “void or nothingness” as “chance, unpredictability, or confusion,” is significant in understanding our neurology of perception. This paradox of meaning I believe forms the basis of human perception, and demonstrates our preference for the seemingly concrete.

¹² *The Theogony of Hesiod*. 700 B.C., Translation H.G. Evelyn White (1914) 116–163, Line 116-138.

¹³ “chaos.” *Merriam-Webster.com*. 2014. <http://www.merriam-webster.com> (18 April 2014)

¹⁴ “chaos.” *Online Etymology Dictionary*. 2014 <http://www.etymonline.com/> (18 April 2014).

¹⁵ “cosmos.” *Online Etymology Dictionary*. 2014 <http://www.etymonline.com/> (18 April 2014).

Neurologically, we interpret the external world by both the limbic system, and the frontal lobe. The limbic system is the older part of the brain, and generally acts automatically because our survival literally depends on satisfying our need for safety, food, shelter and procreation.

The frontal lobe developed later. The frontal lobe interprets the external world as well but there is a time lag to receive and process information. The time lag is due to both the longer distance for information to travel and neurotransmitters that facilitate efficient communication, among other probably factors.

Perhaps the ability to think symbolically is due to this time lag. I call this “the experiential gap,” and this gap is responsible for the first hand knowledge of separateness.¹⁶ We then fill in this void with any number of things, such as money cars, houses, people, food, drugs, alcohol. And ideas. with ideas and communication systems in place, we project out our explanatory systems and the quest for our various “unifying theories” detailed above.

Because the need for survival (the concrete) is stronger, we pick the appearance of concrete ideas as winners over abstract in what I call “the delusion of certainty.” Certainty is more important than being right, because we must free up mental processing power to survive: eating and taking action to avoiding the oncoming tiger or invading army is more important than standing still and debating whether the action we take is morally or ethically right.¹⁷

The frontal lobe and limbic system are joined in this dance of seeking novelty to get new food, new resources, new procreation, and new ideas, and generating certainty, to free up processing power for the next challenge. And in the face on the unknown, we make up myths, religions, and conspiracy theories to provide the appearance of certainty.

The Selfish Gene

The purpose of the selfish gene is not just to get into the next generation, when the frontal lobe is considered. The purpose is to first survive, then get money and status, distinguish itself from the other competition, to get a better mate. This drives innovation and multiple theories.¹⁸ So it is not just a universe via the Big Bang. It is the Multiverses Its not just 4 dimensions. Its 8, then 12, and so on.

But I suggest that major topics in physics and astrophysics fall into this same category, and that by examining some of these unstated assumptions that are embedded into our perception, we can move

¹⁶ Compare this with the Garden of Eden, where we lose our innocence and develop knowledge of sin and opposites.

¹⁷ Compare Fyodor’s intrigue with a passage in *Revelations 3:15* in *The Brothers Karamazov*: To the angel of the church in Laodicea write: The Amen, the faithful and true Witness, the Beginning of the creation of God, says this: 'I know your deeds, that you are neither cold nor hot; I wish that you were cold or hot. 'So because you are lukewarm, and neither hot nor cold, I will spit you out of My mouth....’ Taking concrete action and a position is better than being in the middle. regardless if it is later judge as Right or Wrong.

¹⁸ In Dostoevsky’s *Crime and Punishment*, Raskolnikov was obsessed with coming up with the “new word,” idea, concept; Compare this with any number of writers, scientists or musicians, who seek to find a new idea, concept, theory.

beyond our creation theories, form a new global consciousness, and perhaps improve upon our description of the external reality:

The Embedded Ego

We need to smash the human ego from our explanatory systems, whether religious or otherwise, to truly describe the external reality. Here are some topics that have problems with their foundational assumptions.

The Big Bang:

The unstated premise here is that “Because I have a perceived beginning and a perceived end, then the external reality must also.” I suggest this is false. This is a projection of the human experience onto the external reality. I find no support that there must be a beginning except our sense of time and separateness. There are other species right here on earth that interpret the external reality differently, with different hearing, sight, life spans.

Time:

The unstated premise here is that “because I have perception of time based on a 24 hour clock, then it must exist in the external reality as well.” We know this is based on our Earth’s orbit around the Sun. But we also know that there are other planets and solar systems with different orbits. There are other species that have different internal clocks than us. So imposing our human ego perspective on the external world results in false calculations and conclusions. If our goal is to accurately describe reality, then this must be abandoned as a foundational part of the description., if the goal is to accurately describe an external reality.

Inflation:

This assumes as true both the Big Bang and Time. It proposes that in an instant, the universe expanded such that the light radiating back from the Cosmic Microwave Background is radiating back from the Big Bang. And Earth is at the center of it all. This is pure human centric. While the energy we are receiving may be from the CMB, its conclusion that it is from The Big Bang is based on human interpretation. If we cannot quantify the Milky Way’s rotation, have competing formulas to calculate the redshift and the distance of the Moon, then how can we hubristically think we can accurately quantify a once in a lifetime event based on circumstantial evidence and massive assumptions in mathematical calculations?

More likely, the CMB is a border between a different structure, or the energy in light diminishes so much due to unknown particles that stand between us and the CMB. I suggest that the only structure of the cosmos that is consistent with the scientific method is a spiral. the only issue is where we are on

the spiral. Perhaps many spirals are twisting through each other. We simply lack the interpretive information to determine this.

But because we lack the interpretative information or the computing power does not mean this is any more philosophy than the Big Bang the Multiplex, Quantum Uncertainty, or many other gravitational waves, or many other theories. A spiral shaped cosmos would help explain dark energy and dark matter - its just gravity at a larger scale.

Quantum Uncertainty:

The proposition that a particle can be two states at once is solely due to our limited perception. Like our interpretation of Chaos, just because we cannot quantify it does not mean it is everything at once. Thats it. It is a limit of perception and detection, plus a demand for quantifying and certainty, not an absolute rule.¹⁹ Perhaps no other concept in theoretical physics has been so bastardized in the popular media. Unfortunately many members of the theoretical community contribute to this lunacy. Pure human centric philosophy and mental gymnastics.

Basic symbolic logic is violated when we claim that (a) because we cannot quantify a something, then (b) it follows that there are an infinite realities of me doing different things. Imagine, if you will, that theoretical physicists are claiming that because Malaysian Flight MH 370 is not quantified, then it is lost, found and abducted by aliens, all at the same time.

Numbers / mathematics:

Numbers are a human creation. And we love patterns. But just because a pattern emerges doesn't mean it means something A good example is Rubik's Cube. Lots of patterns and possibilities, and none of them describe reality.

The calculations used to from the theories of the Big Bang, redshift, and inflation use assumptions. The scientists that generate these calculations have the same education as the quantitative analysts used by Wall Street for their financial models. The difference: the value of our 401(k)s are not contingent upon the calculation of the redshift. There are no real world repercussions to erroneous assumptions. Indeed, it is arguable whether the millions lines of code are even checked by other scientists. These ideas exist only in silicon chips, based on numerous assumed numbers and algorithms.

Higgs Boson:

There is much fanfare about the Higgs Boson. But there are foundational problems.

First, it exists only in the lab. It has never been seen in the wild, so to speak. The Periodic Chart of the Elements has been completed by man made substances that only exist in the lab. Is the Higgs the same thing? I suggest unequivocally that it is, especially since well over a trillion proton

¹⁹ An interesting analogy here are Polytheistic cultures. Polytheistic systems do not mean there are many Gods. Rather, they arguably suggest attempt to quantify that there are many different characters of the same God.

collisions were required to detect one Higgs event²⁰. As a former lawyer, one in a trillion is meaningless, a needle in a hay stack, that if I keep doing something long enough perhaps it will appear.

How many collisions would be necessary to produce enough matter in the cosmos, and even then, based on current theory, 95% is missing? As a former Classicist, the reality of Alice in Wonderland is far more certain than the Higgs Boson. And again, numeric algorithms that exist only in silicon chips is not persuasive - no real world repercussions for failed calculations means that, if the calculations are wrong, we will never know.

Uncertainty Index

Because of the many assumption values in calculations, theoretical physicists and astrophysicists can enhance transparency and intellectual honesty by openly recognizing that their work is based on assumptions, and is not fact. One way to do this is to implement an “uncertainty index.” This index would quantify the raw number of assumed figures, and also a relative weighted score of the effect that those assumed values have on the entire formula. For example, if a formula has 100 variables, and 5 of them are assumed, then the raw score is 5%. If those 5 have an effect downstream, let's say another 5, then the weighted score is the combination of the total assumed variables, 10, or 10%.

Conclusion

Our humanity is deeply fragmented. So are we as individuals. One way to reconnect ourselves to the global community to form a new consensus. I suggest that the new unifying theory can be based on the open recognition that all explanatory systems have unstated foundational assumptions at their core, that all are to some degree, faith based practices.

This understanding is quantifiable: we develop explanatory systems based on our limited perception, plus human interpretation, dancing between the desire for novelty (seeking something new to push progress), and the need for certainty (to free up mental processing).

Until we smash the embedded ego contained within our explanatory systems, and we quantify how the neuroscience of our limited perception projects our human experience onto the external canvas, humanity will never truly develop an accurate description of the external reality, forever building multi billion dollar pyramids, chasing our own tail, constantly spinning myths of hubristic fact and certainty, only to always arrive at the edge of chaos.

²⁰ Cian O'Lunaigh, *New Results Indicate that New Particle is a Higgs Boson*, 11 December 2013, (18 April 2014). <http://home.web.cern.ch/about/updates/2013/03/new-results-indicate-new-particle-higgs-boson>