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“Why has government been instituted at all? Because the passions of men will not conform to the dictates of reason and justice, without constraint.”

– Alexander Hamilton, *The Federalist Papers* No. 15 (1787)

“Your people, Sir, are a great beast.” – attributed to Alexander Hamilton

Entropy & Evolution: Entropy rules the universe. Destruction always seems easier, faster, and more natural than creation. The fire burns the wood too quickly, fire burns the Library even more quickly, destroying names, poetry, literature, records, knowledge and ideas.

Gravity, magnetism and other forces of attraction impose some order on the universe, but as often as not, even they do the work of entropy. In order for evolution to occur, the previous arrangement must suffer entropic effects. Evolution and entropy are inextricably related.

- ✓ **Doctor Who:** Stars implode. Planets grow cold. Catastrophe is the metabolism of the universe. I can fight monsters. I can't fight physics. – Dr. Who, “In the Forest of the Night” (2014).

Life develops in environments created by gravity, magnetism, and the other forces of attraction. Intelligent life develops occasionally in these places as well, and intelligent life creates complex systems, changes the environment and imposes its own order. Intelligent life pollutes the worlds on which it develops, breaking down the environmental systems of their world, wars among themselves, destroying their systems, so that they have to leave and go into space. Oftentimes, intelligent life, and even life, are the agents of entropy.

- ✓ “So you are asking me as a psychologist. ... Then as a psychologist, I'd say you are confusing suicide with self-destruction. Almost none of us commit suicide, and almost all of us self-destruct. In some way, in some part of our lives. We drink, or we smoke. We destabilize the good job or the happy marriage. But these aren't decisions, they're ... They're impulses. In fact, you are probably better equipped to explain this than I am. ... You are a biologist. Isn't self-destruction coded into us? Programmed into each cell?” – Dr. Ventress (who was dying of cancer), *Annihilation* (2018).

- See also *Neurotic Paradox*, 4 Culture, p. 413, *supra*.

A starship flying through interstellar space is a little pocket of life and order in the vast entropy of the universe, even as it is violating the relativistic speed limit of the universe through which it is flying. At the very least, the movement of the starship causes a disturbance, which then becomes the external entropy force that destroys, disturbs, or changes something else. Sometimes when starships arrive at planets, wars are fought and the planet is bombarded and/or damaged, and the starship becomes the messenger of entropy.

Order is the most basic function of the governments and central authorities of a civilization to impose a system and maintain it against internal and external threats. But whose system, whose order, among the competing authorities and interests will prevail? The process of competing systems and interests does the work of entropy, destroying lives, structures, knowledge, and hopes. Those who are not in power in the current system, welcome entropy with open arms.

- ✓ Once the frame of the GGDM simulation was moved to space opera, I asked “Well, what is the equivalent of natural disasters on Earth in a space setting?” For simulation purposes, the answer was Entropy and humans were their own constant. All else – Disruption Events, Interpretations, Interventions, Diplomacy – evolved from there.
- All Things Must Pass: ‘All things must pass so that new things can enter the world,’ however attractive, is a teleological explanation of death and destruction phrased as a meta-physical *a priori* law. I must die so that the world can move on would be a false statement (unless you are a messianic megalomaniac or fictional hero), but I will die and the world will move on would be an eventually verifiable prediction. Whatever truth is apparent in the ‘all things must pass’ statement – which has been handed down for two thousand generations – it is still suspect for being a human teleology. But time is the ultimate teleology function of this universe and thus, teleology statements regarding or implying time are probably the most valid observations. See discussion of teleologies, Patently Off Limits, 3 Patents, p. 750, *infra*.
 - ✓ Even Rose Tyler in Dr. Who avoids this statement in the Bad Wolf speech, saying only “Everything must come to dust. All things. Everything dies.” Phrased in this way, it is simply an empirical observation, not contradicted by any current scientific knowledge, with possible philosophical implications (sort of like quantum physics).
- Organizations: Organization is what allows the office to continue functioning when you go on vacation. Organization leads to more efficient use of the time in a day. Organizations, such as corporations and foundations, continue operating long after their founder(s) have passed or moved on, they are entities independent of any one of us. Organizations multiply the effect of one person a thousand-fold by propagating the ideas and techniques through others, and into the future. Organizations require remote authority, by which the members of the organization maintain the organization without the one person or small group being present to supervise and enforce their will. Organizations require and imply systems and order. Civilizations are organizations. Civilization is inconceivable without the kernel of organizations.
 - ✓ Or in case of civil war: There is a necessary argument that during all of the civil wars and power struggles, the Roman Empire continued to function because the lower administrative systems held it together.
 - ✓ Ants rule the jungle, no other creature, including humans, match them in organization, determination, numbers, cleverness and ferocity. Humans survived first because of mastery of fire and our body size, later, humans damaged their environment. See previous discussion, 1 Entropy, *supra*.

“If the basis of popular government in peacetime is virtue, the basis of popular government during a revolution is both virtue and terror; virtue, without which terror is baneful; terror, without which virtue is powerless. Terror is nothing more than speedy, severe and inflexible justice; it is thus an emanation of virtue; it is less a principle in itself, than a consequence of the general principle of democracy, applied to the most pressing needs of the patrie.”

– Maximilien Robespierre, “On the Principles of Political Morality,”
February 1794

Red Guards: To those familiar with the history of the Reign of Terror, these are some of the most chilling words in history; they sound so high-minded and reasonable, but what followed were hundreds of deaths by execution, called the Reign of Terror, which ended, as history always notes, by the execution of the speaker of those chilling words. Robespierre was the difference between the American Revolution and the French Revolution. Jefferson was a scary radical, but he was no Robespierre, and the newly-formed United States had the Western Frontier, an outlet valve; whereas France was a self-contained, complex, developed nation in a radical revolution.

- ✓ “‘I can’t help thinking of Bannon as the Robespierre of this Trumpian revolution, ultimately devoured by the forces he helped release,’ emailed Charlie Sykes, the legendary conservative radio host in Wisconsin who has emerged as a leading Trump critic. ‘He helped create a pro-Trump media ecosystem that demanded loyalty, not ideological consistency. Now that he is perceived as disloyal (and perhaps dangerous), he is going to get the same treatment he used to give the globalist, establishment types.’” – Charlie Sykes, cited in the Washington Post, January 4, 2018.

Chairman Mao Zedong, educated in France and well-read in Western political works, and familiar with Chinese history, let loose upon China a deliberately-fashioned Chinese version of the Reign of Terror in the form of the Red Guards in August 1966. The damage to traditional Chinese culture was and is immeasurable, and it took years for the government to regain control of the countryside from the radical, feuding student militias. Prior to the Communist Revolution in China, the Taiping Rebellion – whom the Chinese Communist lauded as historical predecessors – had devastated Buddhist and Confucian places and destroyed their libraries and schools.

Like “The Needs of Earth” episode of the Babylon 5 spinoff series Crusade, the Chinese will want back someday what their revolution destroyed. Hopefully, enough is preserved in places such as the Fei Tian Academy of the Arts and Fei Tian College, a classical Chinese Dance school in New York City (very closely related to or intertwined with Shen Yun Performing Arts company),¹ that some of their culture can be returned to China when the time is right.

To Insure Domestic Tranquility: One of the most fundamental prerogatives of a society is to impose and maintain order, and not just on the level of criminal activities and what constitutes morally right and acceptable behavior, but also on how reality is divided up, what parts connect, and what constitutes knowledge. Of course, a few criminals are occasionally useful too.

The Order Power must be activated for any of the following purposes:

1. Declare/Move Capital Colony,
2. Conversion/Naturalization (of a conquered **alien colony**),
3. Maintenance,
4. Government Formation (see Government Titles, *infra*).

Activation of the Order Power for the purpose of Declaring or Moving a Capital Colony requires one Act and one Scene on the target colony. Activation for the purpose of attempting to Convert or Naturalize an **alien colony** requires one Act and one Scene on the target colony. Activation for the purpose of maintenance will require one to three Acts. Declaring or Moving a Capital Colony and Maintenance also cost RPs from the Treasury. Finally, the actions regarding Government Titles are fully detailed in the section following the Order Section.

- **Gaveling:** Activation of the Order Power for the purpose of Declare/Move Capital Colony, Maintenance, and Government Formation can never fail due to inactive Constructural Elements. Conversion attempts are also never effected by inactive Constructural Elements on the target colony. Naturalization attempts, however, may fail due to inactive Constructural Elements at the target colony.

- ✓ Mainly this is for game convenience as citizens in the capital areas have historically had a disproportionate effect on the national government; e.g., Paris Riots that led the French monarchy to build a palace in Versailles, and the later ideological riots during the French Revolution. Or the St. Petersburg Massacre in front of the Winter Palace. Capital population is the most immediate threat to a national government, all other agitators have to march on the capital from a distance, e.g., the 1922 March on Rome, the 1958 French Algiers uprising that got as far as Corsica, or the War of the Roses.

While there may be some general argument that declaring or moving a Capital Colony is location-specific and thus subject to inactive Constructural Elements, *for game convenience*, those are ignored due to the importance of each position having a Capital Colony at all times in GGDM (thus, it is a *game play concession*). The Concierge can address resistance to the Capital Colony move through creative Interventions, raising the issue above to a story event.

Dr. Hans Fallada: *Death, Colonel Caine, correct. Thanatology's the name for it. Death for you, Colonel, is a bureaucratic problem. Who did it? When, why did they do it? A problem to be solved, am I correct?*

– Lifeforce (1985) ²

Crime & Punishment: I have a neutered female tabby cat whom I rescued from the basement of a house where her owners had moved out. She was emaciated when I adopted her; that was ten years ago. She was not raised with other cats and didn't get along well with the other feral kittens I brought in later, especially when they grew up to be tom cats (they are neutered as well). It was becoming a problem. So I allowed her to live in my bedroom, an enclosed area containing my bathroom and one other room. She has been there for nine years, she seemed to be happy in the space, with the big window and cat condo, and we had a great relationship, she was a loving cat. When I adopted her, the humane society vet opined that she was 2-3 years old, now she must be 12 or 13 years old. She is in good physical health, a slightly fat, lazy happy tabby.

In the last summer, she has begun urinating on my bed during the day; inappropriate urination has not been a problem in the past and the other cats downstairs do not urinate on my furniture or carpet. She has a nice enclosed cat box that she has used for years, and it was not unclean. You can imagine how angry it would make you to come to bed at night and find out that the cat urinated on your sleeping place. I tried scolding her, yelling at her, I became very angry with her. Each time this happened, about five times in two weeks, I'd have to sleep downstairs on the love seat and the next morning, tear apart my entire bedding and shove it into the washing machine.

After some time, I reasoned that if she could not be convinced not to urinate on my bed, she could not be in my bedroom any longer (I have not been able to keep her off my bed); I took her out of the bedroom area and put her in a large 'two level' wheeled cat cage downstairs. She clearly disliked the cat cage and after a week, I relented and took her back up to the bedroom. The next morning, two hours after I got up, I discovered she had urinated on my bed again (she

has not urinated on the bed while I was sleeping in it). I had no choice but to put her back into the cage, after I cleaned it with the vacuum cleaner and a wet rag.

- Incarceration: This is really not much different than the penal law solution – incarceration of humans who will not be convinced to act appropriately in our society; especially those who commit major offenses and are deemed to either be a danger to the public, a danger to themselves, a flight danger, or in danger of physical retaliation from the public or their victims or their families.

- ✓ Or as George Kennan said of the Soviets in 1946: [They are] “Impervious to logic of reason, and ... highly sensitive to logic of force.” This is true of the 1%.

If they have not been convinced or deterred, and there is sufficient evidence that they have committed crimes, they must be removed from society, either by some form of incarceration or by execution. Not because it’s ‘right’ but because it’s the most and the only practical solution currently available, and all other post-criminal solutions (including capital punishment) devised have not provided convincing evidence of effectiveness.³

- ✓ “Appeal to force is never an argument,” said my formal logic instructor at Point Park College. At the end of the lecture on informal fallacies, he added, “While appeal to force is never an argument, have you ever tried to convince a three year old that it’s time to go to bed when he doesn’t want to?”

Criminal laws are an appeal to force argument for those in our civilization who will not be convinced otherwise. Criminalization of dissent, *per se*, even if not explicitly stated, is an admission by the government that its arguments have failed to convince or quiet a significant percentage of the population or those who matter.

- Recidivism: Nor is this much different than the recidivism problem (except of course with those who were executed); less than 12 hours after being reintroduced to my bedroom space, she urinated on my bed again and had to be put back into the cat cage. She has failed, apparently, to make any causal connection between scolding, my anger at her, being confined to a cage, and her acts of urination on my bed or at least, they have not deterred her.

Recidivism rates are the most bedeviling problem of criminal punishment. Some states adopted three-strikes laws in sentencing aimed at those who have previously been convicted of serious or violent crimes and are back before the court again accused of serious or violent crimes. Politicians fear the public and media outcry over a preventable, serious violent crime or repeat crime committed by someone recently released from prison.

I recall from criminology class that a study found that the majority of the crimes committed in Baltimore over a multi-year period had been committed by a shockingly small group of people, pointing to criminality as a sort of profession, fulltime occupation, for a select group of people: These people plan and commit crimes (sometimes spontaneously) like you get up each morning and go to work.⁴

My brother had a friend who had been sent to a juvenile detention center when he was 16 years old. People argue that juvenile detention centers are toxic environments and do more harm than good; but consider how the child ended up there? He was released as an adult; three days later, he stole a pickup truck, broke into a recycling center, drove the crane around, picked up a cube of compressed aluminum cans, put it in the back of the truck, and

drove off. He was caught shortly and re-incarcerated as an adult; my brother said he was the dumbest human he had ever met.

- ✓ I am aware that I am shortcutting through a huge amount of hot and emotional controversy relating to juvenile detention centers, and adult prisons. There is much human fallacy on both sides of the bars. The human penal system depends on the incarcerated being at least marginally better than the incarcerated, while they are locked in the same cage together. Just as soldiers in a warzone are expected to somehow keep their humanity. And that frequently doesn't happen and our systems have not been sufficient to insure that it does. I recommend watching the movie *Sleepers* (1996).
- Failure of the Why Not Question: The second sense in which Order is used in GGDM is that of enforcement of appropriate behaviors. It is possible (likely) that universal entropy expresses itself in human criminal or deviant behavior, and thus there is a rough continuum from the first sense of Order discussed at the top of this document.
 - ✓ The *gravest harm and disorder occurs* when a civilization forgets or distorts its own previous answers to the Why Not question for any convenience or ideology.

Almost every legitimate reason for terminating a relationship in our society – marital, social, employment, contractual, business, parental, guardian, romantic, cooperative, fiduciary, educational – is reducible to the failure of a party who has a duty, to act appropriately, and a breach of the relationship as a result. It is the situational failure of the Why Not question. Across human civilizations, there are certain classes of inappropriate behaviors that are universally considered punishable as crimes (Why Not Behaviors), broadly they are:

- ✓ Murder and homicide except in defense,
- ✓ Theft in all its many, many guises,
- ✓ Contraband (trading in material goods banned by society),
- ✓ Kidnapping (universally, forcibly taking and restraining a person),
- ✓ Wanton destruction of another's property (arson, vandalism, mischief),
- ✓ Rape (previously considered a crime of trespass, but now not generally),
- ✓ Violation of ownership rights (trespass, breaking, conversion),
- ✓ Disloyalty (treason, sedition, espionage),
- ✓ Violation of duty of public office or fiduciary duty (corruption, official intimidation).

Finally, although it varies greatly, every civilization has had some controls on who can have sex and how, and limits on the provision of sexual services (in all forms) for material gain.

- The Other Hole in Your Head: Within this last summer, there is, I believe, a person in my neighborhood who 'delights' in hurting cats. In the spring and early summer of 2019, I had at least three cats come to my porch with injuries that I thought were consistent with being shot with a BB gun or CO₂ pistol. Twice this year, at about the same time of the night and nearly the same place on the street, a kitten has been hit by a vehicle and killed in front of my house (about six months apart), two of three kittens from a litter are now dead at less than a year old. I do not live next to a 'busy' street, I have lived in this half-populated residential area for eleven years now, and not until this year have any of my cats been killed by vehicles.

There is another sense of why crimes are crimes that is little discussed: It is repugnant for someone to 'fill' their existential void by inflicting harm, pain and death on other living creatures for their own amusement.⁵ Don't pretend no one does this, don't look away and hum.

Repugnance is a visceral reaction, see discussion 5 Fallen to Earth, p. 1573, *infra*. Videos exist showing people swerving to hit turtles, there are also many cruelty videos on YouTube.

- ✓ People who harm small animals for amusement would do the same to humans if they could get away with it. This is at the very base of criminalizing animal abuse.
- ✓ As a practical matter, among hunter-gatherer cultures, one does not harm animals unless hunting for food and one does not take more than they need. It is harmful to the tribe and is usually codified in their belief systems honoring animal spirits.

By extension, the same applies to wanton infliction of emotional distress or destruction of property and chattels. And by extension, to a much lesser degree perhaps, are the crimes relating to filling one's existential void by excessive materialistic, hedonistic behaviors.

- ✓ The Why Not question is thus – phrased in the negative – a question of how not to fill the existential void that all of us carry around. Only the most extreme behaviors which are deemed harmful or not useful to society (the positive version of the question is what meaningful behaviors are useful and to be encouraged in society) are criminalized (excepting criminalizing political opposition), but the Why Not is not limited simply to either individually or collectively to criminalized behaviors.
- Feline Acedism: I also had issues with another of my house cats during that time, a 15 pound black and white neutered male who was also peeing in inappropriate places; the other cats were not allowed into my bedroom so he could never have urinated on my bed (it could only have been the female tabby). As it turned out, he had a blockage and had to be admitted to the veterinarian hospital two days before Christmas 2018, my poor kitty spent the holiday in the hospital for an emergency urinary catheterization. So after that, all of my cats were fed prescription SO cat food exclusively and I observed no additional inappropriate urinations, further, they all seemed to be happier and more active than previously. The female tabby was included in the feeding program, and after about three months of the prescription Urinary SO diet, I decided that her inappropriate urination on my bed might have been a symptom of a potential blockage.

As such, I decided to allow her to reside in my bedroom again and observed that she was regularly using her litter box. She was so happy to be back in my bedroom, out of the cage, and soon it was just like the old days... About a month and a half after she was returned to my bedroom, I came home from the gaming club late on a Saturday night, and she had urinated two places on my bed. One of the places was below the pillows, right where I sleep – the human mind immediately thinks that had to be intentional messaging. Of course I wasn't the least bit pleased with this, and resignedly returned her to the cage and slept on the couch that night. Unlike a human child, I cannot ask her why she did it, I cannot even be certain that she understands that she did anything at all, or that she has any memory of it or makes any causal connection.⁶

But clearly there was something else involved in her urination on my bed than potential physical urinary problems, for example, perhaps it was a feline form of acedic rebellion, even though I have regularly allowed other cats into the room in short supervised visits over the years and even though we don't think of acedism is a feline 'problem' considering that they sleep 14 hours a day.

- ✓ “Acedia is a state of listlessness or torpor, of not caring or not being concerned with one’s position or condition in the world. It can lead to a state of being unable to perform one’s duties in life. It is related to depression. Acedia was originally noted as a problem among monks and other ascetics who maintained a solitary life. ... Evagrius’ contemporary, the Desert Father John Cassian, depicted the apathetic restlessness of acedia, ‘the noonday demon,’ in the coenobitic monk.” – from Wikipedia article, “Acedia,” August 4, 2019.

So again, I had no other sensible, humane solution than to return her to the cage.

“The four orders [of natural phenomena] are the inorganic, the vital organic, the mental organic and the super-organic, or social.”

– Clarence Marsh Case, Outlines of Introductory Sociology (1924) p. xvii ⁷

Order of Genesis: I believe that it is inherent in Mr. Case’s scheme that the four orders of natural phenomena are incommensurable, it is the incommensurability that defines them as orders; that incommensurability in successive things (entities, ideas, civilizations) is evidence of emergence; in Mr. Case’s four orders, they may be evidence of successive unfolding cosmic emergences, a progressive fracturing of the universe as it expands (see Big Bang Theory, 1 The Big Bang, p. 2, *supra*). However, emergence is not a case of complete non-linkage, it is simply the case of the unexpected or a whole that is greater than the sum of its parts emerging from what came before, therefore a continuum may be formed (and has begun to be formed intellectually in the West) through a series of what we have termed as “genesis” events:

- ✓ *Abiogenesis* (1870), the theory that life (the second order of natural phenomena) arose naturally from the physical universe, inanimate matter (the first order of natural phenomena) serves to connect the first and second orders of natural phenomena in the evolution of the current universe.
 - “This is a cell. Like all cells, it is born from an existing cell. And by extension, all cells were ultimately born from one cell. A single organism, alone on planet Earth, and perhaps alone in the universe. About four billion years ago one became two. Two became four. Then eight, sixteen, thirty-two. The rhythm of the dividing pair, which becomes the structure of every microbe, blade of grass, sea creature, land creature, and human. The structure of everything that lives and everything that dies. As students of medicine, as the doctors of tomorrow, this is where you come in. The cell we are looking at is from a tumor. Female patient, early thirties, taken from the cervix. Over the course of the next term, we will be closely examining cancer cells in vitro and discussing autophagic activity.” – Lena, university lecture, *Annihilation* (2018) (Note: Lena and Kane were never given last names, like Adam and Eve perhaps?).

The question of abiogenesis is the emergence of that first cell, from the first order of natural phenomenon to the emergence of the second order.

Abiogenesis is a theory properly because it proposes a question, proposes an answer, and can be tested, is testable, we can poke and prod our way to answers and confirmation by experimentation and observation, and sub-theories, the ultimate proof of

which will be when we can find a repeatable process to create life from inanimate matter. So well is that, but...

- ✓ *Psychogenesis* (1838), a concept of phenomenology and psychology, currently connects the *second order of natural phenomena* (life, biology) to the third order of natural phenomena (psychology, sapience, the mind, biological awareness). Theories on the evolution of the brain and nervous system, also help to bridge the gap between the second and third orders of natural phenomena.
 - “Perinatal experience is posited as generative of psychogenesis: the psychological birth of the infant. The process involves a sentient human being rather than a nonconscious tabula rasa fetus. That birth experience is only traumatic is reductionist. The origins of positively colored affects as well as sexual feelings and even ecstasy may be intrauterine. The importance and complexity of the birth experience can better be described in terms of phases of being that parallel the physical stages of labor. These phases are immanence, obstruence, descendance, experience, ascendance, emergence, and transcendence. Each of these phases encompasses a unique state and dynamic process. Birth as such is shown to be a rich multidimensional experience that is also transformative.” – abstract of Stephen Slade Tien, “Psychogenesis: A Theory of Perinatal Experience,” *Journal of Phenomenological Psychology*, Vol. 23, Is. 1, January, 1992.
- ✓ *Noogenesis* (1955) is related to psychogenesis, sort of a little sis, with new generation thoughts. Noogenesis (phylogenesis & ontogenesis) seems to focus on the species as a whole and thus might shade over toward connecting the second order to the fourth order of natural phenomena, whereas, psychogenesis seems focused on individual members of the species (e.g., see previous endnote). But are noogenesis and psychogenesis testable (and in what way?), and thus, are they really theories?⁸

And here, more than anywhere else, stands the bright shining line that divides human ‘knowledge’: The first and second order of natural phenomena (the physical universe and the biological), and their abiogenesis connector, are testable, repeatable, can be numbered, expressed in laws, defined, applied, and engineered. We call this science, medicine and technology, except that we cannot yet get the abiogenesis down. After that, it all gets a bit fuzzy, some of it is philosophy, some of it is social sciences, some humanities, some psychology, and all of it generally not testable or repeatable, or even physical within our current framework:

- ✓ The bright line is between the *objective and the subjective*, in studying third and fourth order natural phenomenon, we are studying ourselves on two different levels, and that is always more so subject to the times, interpretations, opinions, and needs all of the evolutions and time possible to humanity to arrive at the core truths. The previous error is that it doesn’t make it any less ‘real’ either to us or to the universe.

Imagine an epochal dimensional evolution where the framework for understanding the third and fourth orders of natural phenomena become evident in the way that we understand the ‘lower orders’? See epochal FTL discussion, 1 Stardrive, pp. 783-785, *infra*.

What sits between the third and fourth order of natural phenomena? What connects? What explains the link between biological awareness and the super-organic? How did the universe develop the super-organic from biological awareness as it did life from the inorganic? *Hint?*⁹

- Tyranny of Tendentious Pedants: Are emergence and incommensurability absolute (i.e. 0 or 1) or a matter of degree? We seem to have not quite decided. This is not unusual, is sincerity zero or 1 or a matter of degrees? Can one believe they are being sincere, have an internal intent to be sincere, but are actually not? Can one be sincere within a set of views and intentions, but not otherwise? Can something be emergent from and incommensurable with X, but not quite when compared to Y (it may depend on the relationship of X and Y). In a sense, we seem to demand a clear break, a startling difference between the origin and outcome before declaring it emergent. And that is part of the problem, but it appears that most of the philosophers have had no issue with considering emergence in conditions and degrees:
- ✓ “Complex systems research has been hindered by a lack of precision when people refer to ‘emergent properties.’ Contemporary views of emergence in philosophy include Chalmers’ spectrum ranging from a mystical property to the whole-part relationships in mundane objects including filing cabinets. They also include Bedau’s distinction between ‘weak’ emergence, based on simulation and modeling, and ‘strong’ emergence relying on downwards causation.” – Christopher W. Johnson (University of Glasgow website), “What are Emergent Properties and How Do They Affect the Engineering of Complex Systems?” 2005.

If emergence can be considered in matters of degree, can incommensurability that I have identified as the clear marker of emergence also be considered in matters of degree? Is it a matter of proper framework? When we speak of emergence in spectrums or ‘strong’ or ‘weak’ emergences, are we really talking about incommensurabilities?

- ✓ It would be fallacious to insist that the emergence be a complete break from what came before, such would destroy the relationship inherent in the concept. But at the same time, there has to be a clear break, clearly something unexpected, different.
- As Coo-Coo as a Swiss Clock: The universe is still expanding. What would be the next incommensurable order beyond the fourth, what would be the fifth order of natural phenomenon and does it already exist but we cannot see it? We keep feeling around for it in science-fiction movies, e.g., Magellan, Arrival, Contact. Possibly the best expressed concept, in a linear development sense, is Isaac Asimov’s “Galaxia Gaia,” but we should hardly expect the next cosmic emergent order to be linear in the form of just something bigger than the current.
- ✓ Such an emergence would make facts in the fourth order also facts in the fifth order, just as first and second order facts are facts in the third and fourth orders.
 - ✓ Humanity and human civilization would not just disappear with the advent of the fifth order of natural phenomenon, just as the second order did not disappear with the advent of the third and fourth orders.

There are many problems with all of this, not the least of which is that we don’t know why there would be a fifth order of natural phenomenon (other than the age of the universe) any more than we know why or how there is or needed to be a second, third, and fourth order of natural phenomenon. Is it connected to the expansion of the universe, which is now, since the 1990s, thought to be accelerating? And it is only by identifying the structural orders of phenomenon that we know, were we able to imagine the concepts that we call ‘genesis’ to link them, e.g., abiogenesis is accepted because there is currently no better theory of the origin of life, and because we have developed evidence of how it might have occurred.

- ✓ Regardless of what you think of my (crackpot) ideas, here is the one undeniable of the Anthropic Principle and the whole concept of cosmic evolution: There is something

in the universe which drives it toward localized low-entropic states (e.g., life, stars, planets, the super-organic) – *which we have historically personified and deified as creator, supreme being, spirits, in our own petty image* – in opposition to the predicted high-entropy end of the universe. The entire struggle of religion, science and human meaning, is to explain localized low-entropic states (mainly us); GGDM calls these Constructural Elements. This is perhaps implicitly recognized in the concept of the Boltzmann Brain. This has become an unstated axiom of modern science. Boltzmann really only described half the phenomena; he explained mainly high entropy states, but not the apparent predilection toward opposite low-entropy states.

- The Camus Test: So is the fifth order of natural phenomenon a form of Camus’ “philosophical suicide”?
 - ✓ “From this point of departure he proceeds to his critique of the different ways of ‘philosophical suicide,’ which he characterizes as so many ways of speculative evasion. All existential thinkers quoted by Camus have realized the futility of reason, all them are seen to have recourse to some transcendent entity as *raison d’être*: Husserl to his ‘extratemporal essences’ of innumerable phenomena, Chestov and Kierkegaard to a deity whose loftiness consists precisely of His incomprehensibility, indeed in His inconsistency, arbitrariness, inhumanity. Chestov is quoted as saying: ‘We address ourselves to God only to obtain the impossible; as to the possible, humans suffice.’ Such deity, to Camus, shows all the features of the absurd; He demands, in the old way, the *sacrificium intellectus*. In point of fact, it could be said that Tertullian’s *credo quia absurdum* has arrived, in the modern situation, at a *vivo quia absurdum*. ... Camus rejects the ‘philosophical suicide’; he refuses to accept any transcendent ... but seeks to remain within the pale of this world and to maintain himself on his scarce certitudes. He likewise discards ... physical suicide, because this also, in its ultimate consequence, resolves, dissolves the absurd, implying acceptance. ‘The point is, to die irreconciled and not of one’s own accord.’” – Erich Kahler, The Tower and the Abyss (1957) (emphasis in original) (available free on Google Books).

On the one hand, I have not offered any “transcendent entity” or supreme substances to explain the absurdity of the universe. I have not said this is beyond what is rational to humanity, I have not demanded *sacrificium intellectus* to embrace the idea of a fifth order – I have not said, ‘you just have to believe and it will be true’ nor have I offered any vision or promise of an afterlife – but have instead, reasoned the existence of a fifth order of natural phenomenon, from the *a priori* base of what we knew in the early 20th Century, that is beyond ours, and incommensurable with ours. See *Not Quite A Priori*, 2 Culture, p. 373, *supra*. But I have cautiously gone a bit past the “pale of this world” and the “scarce certitudes” of Camus.

- ✓ Because of the success of calculus in solving previously impossible problems (see calculus discussion, 1 Entropy, p. 221, *supra*), there seems an idea that a new math will explain quantum phenomenon. In this sense, has math become the “extratemporal essences” (*ut supra*) and the “philosophical suicide” of empirical science? There is a colorable argument in the way that mathematics and math solutions are spoken of in breathless, glowing terms as **the** universal truth and understanding (all others being inferior, fuzzy or untrue because they cannot be mathematically proven); I would not be the first to suggest that math has become the mysticism of science.

“To get from Aristotle to Newton, you have to be able to imagine a world without friction. Luckily, that isn’t so hard; if you’ve ever played air hockey or laced up ice skates, you can vouch for Newton’s first law. But what is the quantum equivalent of an air hockey table – an everyday object that provides us hands-on access to quantum physics? If there is one, I haven’t thought of it.” – Kate Becker, “Is Quantum Intuition Possible?” NOVA, July 28, 2014

When the Thames Froze Over: The “world without friction” turned out to be space; Newton, who lived during the Little Ice Age and whom we believe was never in space, imagined it nonetheless. Maybe he observed ice skating or fell on his butt in the winter (makes more intuitive sense than the falling apple story); the Thames River froze over many times during his life (the Little Ice Age), three times the ice was thick enough that they held a fair on it.

- ✓ Again, I cannot help but to recall the extradimensional toy box from “Mimsy were the Borogoves” (1943) by Lewis Padgett (a pseudonym of American writers Henry Kuttner and C. L. Moore). Science has again caught up to science-fiction imaginations; from the toys in the strange box the children gained an intuitive understanding of another math or physics. This is what Ms. Becker now seeks to intuitively grasp quantum physics.

[Interview] “[Enrico] Fermi would come down in the afternoons, he was busy in the mornings with the more serious affairs of bomb design, but then the HYPO was his plaything, so he would come down after lunch, call us in all around and say ‘what do we do today’? And then he would answer his own question because he knew exactly what he wanted to do. ... It was a very meaningful learning process for me because he had almost phenomenal intuition for what things ought to be. If the answers didn’t come up the way he thought they should be, then he’d patiently go back and repeat the experiment and he was usually right. It was very interesting to work with him.”

– Dr. Schreiber (audio), 1993 Voices of the Manhattan Project by Richard Rhodes

Frame It: It has become increasingly clear (from what I have read) that in the last decades many think the problem with quantum physics is that we may be asking the questions in the wrong frame of reference.

It seems possible, even probable to me that even though the science of quantum physics is that of the first order of natural phenomenon, the quantum understanding may be that it is part of the fifth order of natural phenomenon that we have not yet fully understood or even outlined (and predictably we continue to try to find the answers in the first order sciences). This would explain the frame of reference issue in quantum physics – that physicist are expecting the answer to the quantum riddles to be discoverable in line with existing first order phenomenon knowledge (of which they are the dominant sages in the sacred groves) – and would be possibly a transformative understanding for humanity, the first time we have understood anything beyond ourselves:

- ✓ It is notable that all four of the orders of natural phenomenon identified by Mr. Case fall within the realm of what we know and what was known at the beginning of the

- 20th Century. Thus, all of the orders of natural phenomenon identified and studied so far, are either ‘below’ ours (in the fact flow sense described above) or are ourselves in the sense of the third and fourth order of natural phenomenon (perhaps this is a bit human-centric? Did Mr. Case replace the geocentric universe with a teleological human-centric universe of four natural orders culminating in us?). If indeed we are currently at the edge of recognizing a fifth order of natural phenomenon, it would be the first time in human history where we recognized a natural order beyond ourselves.
- ✓ If you assume that Mr. Case is ‘correct’ or presents at least a colorable framework (noting that his intent was to define sociology within the spectrum of human knowledge) wouldn’t it be interesting if we had the framework to understand all along, but that it was ignored because the originator was a somewhat obscure early 20th Century sociologist (just as GGDM will be dismissed for much the same sort of reason, in addition to the fact that it’s another silly space game and we prefer looking down instead of up)? What of value does sociology have to say to physics or biology? When sociology was not then considered a science but a philosophy branch (Mr. Case’s introduction provides valuable firsthand historical material) and is barely recognized without ‘sniffiness’ as an equal in the sciences even now?

“Vitalism is the belief that ‘living organisms are fundamentally different from non-living entities because they contain some non-physical element or are governed by different principles than are inanimate things. Where vitalism explicitly invokes a vital principle, that element is often referred to as the ‘vital spark,’ ‘energy’ or ‘élan vital,’ which some equate with the soul.

In the 18th and 19th centuries vitalism was discussed among biologists, between those who felt that the known mechanics of physics would eventually explain the difference between life and non-life and vitalists who argued that the processes of life could not be reduced to a mechanistic process. Some vitalist biologists proposed testable hypotheses meant to show inadequacies with mechanistic explanations, but these experiments failed to provide support for vitalism. Biologists now consider vitalism in this sense to have been refuted by empirical evidence, and hence regard it as a superseded scientific theory.”

– from Wikipedia article, “Vitalism,” citing to [Routledge Encyclopedia of Philosophy](#) and to Elizabeth Ann Williams (2003)

Carbon Chauvinist: Vitalism may have been in the background of Mr. Case’s division of the first and second orders of natural phenomenon, which he called “the inorganic” and “the vital organic” (*ut supra*) – notice the word ‘vital’ – in 1924. However, it was not his purpose in the introduction to a sociology book to argue vitalism or perhaps what is now called abiogenesis, just as I have declared in 1 Fallen to Earth, *infra*, that I am not interested in arguing about whether or not there is a God (i.e. supreme being) because it is irrelevant to my purposes in GGDM. That aside, the divisions of orders of natural phenomenon provided by Mr. Case are intuitive and axiomatic, and can be readily observed and accepted without recourse to arguments about vitalism, souls, animating forces or whatever; anyone can see that there is something different between a living creature and a rock (except in the case of some humans ☺); Star Trek liked living rocks.

- ✓ Violation of the natural boundaries between the living and the non-living, whether it be rocks or corpses, is the bedding on which much of horror is constructed, and occasionally, clever fantasy novel endings.¹⁰

I believe that my first exposure to the term “gestalt” came when I was working on some project at the newly-opened Library Center of Point Park College. I cannot remember what I was doing exactly, but I think I had out a volume of the Encyclopedia of Philosophy. Therein I read an article which contained a short description of a conversation of early 20th Century biologists sitting around a stove. One of them (I remember the name Wolfgang) pointed out that if we had all of the chemicals of the human body, in the correct amounts, we could not either create a human body or create life. The conclusion was that the human body (and life) must be something more than the pile of chemicals that we know it contains; there is something that makes the whole greater than the sum of its parts. I was very impressed with it, it stuck in my mind for over 25 years and probably started my thinking about some of what has been expressed in GGDM.

There is something in life that is not present in rocks and that is so axiomatic that the concept of persona, soul, etc. has sprung from this observation since at least late in the Paleolithic Age. At its root, vitalism is based on a common observation that is deducible from the experience of hundreds of generations of humanity on Earth, it is testable and repeatable, but we cannot make it so any more than we can make an earthquake or hurricane. However, where does one draw the line: Is vitalism or theology a mythopoeic explanation for what is commonly observed, e.g.:

- ✓ “Vitalism is that rejected tradition in biology which proposes that life is sustained and explained by an unmeasurable, intelligent force or energy. The supposed effects of vitalism are the manifestations of life itself, which in turn are the basis for inferring the concept in the first place. This circular reasoning offers pseudo-explanation, and may deceive us into believing we have explained some aspect of biology when in fact we have only labeled our ignorance.” *Id.*, quoting Joseph C. Keating, Jr.¹¹

Or is it simply deducible from what is commonly observed in the same way as an algebraic equation; that is, I saw two drunk men enter the bar just before last call, and ten drunks come out at closing time (and no one else entered or left, and all left at closing time), how many customers must have been in the bar when the last two entered? We have a rock, we have a living person, and we have a dead person; they do not have the same qualities, even if made of the same elements. What does the living person have that the rock never had and that the dead person has lost? There must be something different. Science has had similar problems, to wit:

- ✓ “On the other hand Titchener’s prediction – that, due to this irrelevance, introspective psychology would continue to flourish *alongside* behaviorism – with hindsight, seems a bit laughable itself. As Ryle puts it, ‘the extruded hero,’ consciousness, for scientific purposes, ‘soon came to seem so bloodless and spineless a being that even the opponents of these [behaviorist] theories began to feel shy of imposing heavy burdens upon his spectral shoulders’ (Ryle 1949: 328). Ryle’s countercomplaint still rings true today despite recent attempts to revive consciousness as a subject of serious scientific inquiry ... While it may be urged that the hero was never wholly extruded but has been lurking all along in the caves of psychophysics (e.g., in correlations of physical stimulus variations with *noticed* differences in *sensation*), recent attempts to extend this psychology-as-psychophysics approach beyond psychophysics remain nascent at best.” – Larry Hauser, “Behavioralism,” Internet Encyclopedia of Philosophy article, September 17, 2019 (emphasis in original).

While vitalism has been dismissed as a “superseded scientific theory” (*ut supra*) and has been savagely criticized as unfalsifiable,¹² theological, dogmatic, and pseudoscientific, it still hangs

around in the background because it has long been the assumption of humans that living things have something that makes them different from non-living things (this, long before Christianity), and second, that without achieving abiogenesis even once in the laboratory (and that's a scary thought by itself), the mechanistic side of the argument about the origin of life has also not made its case, has not closed the sale of reductionist physics as the explanation of living organisms. So some form of vitalism (by a different form or name) is still possible, biology is stuck with, and cannot shake off, vitalism at least in a metaphysical sense, and Carl Sagan seems to be addressing that argument in *Cosmos*, Ep. 5, adroitly dancing around it without directly mentioning it:

- ✓ “I am, reluctantly, a self-confessed carbon chauvinist. Carbon is abundant in the *Cosmos*. It makes marvelously complex molecules, good for life. I am also a water chauvinist. Water makes an ideal solvent system for organic chemistry to work in and stays liquid over a wide range of temperatures. ...

I am a collection of water, calcium and organic molecules called Carl Sagan. You are a collection of almost identical molecules with a different collective label. But is that all? Is there nothing in here but molecules? Some people find this idea somehow demeaning to human dignity. For myself, I find it elevating that our universe permits the evolution of molecular machines as intricate and subtle as we. But the essence of life is not so much the atoms and simple molecules that make us up as the way in which they are put together. ...

If we did not know better, we might be tempted to take all the atoms that make us up, mix them together in a big container and stir. We can do this as much as we want. But in the end all we have is a tedious mixture of atoms. ... we could not mix those chemicals together and have a human being emerge from the jar. That is far beyond our capability and will probably be so for a very long period of time.”

Carl Sagan was very probably aware of and well-versed in ‘emergentism’ as a scientific theory, which some shade or lump with biological vitalism. Video is available on YouTube.

“Lead the people with administrative injunctions and put them in their place with penal law, and they will avoid punishments but will be without a sense of shame. Lead them with excellence and put them in their place through roles and rituals, and in addition to developing a sense of shame, they will order themselves harmoniously.”

– Confucius, *Analects II, 3*

“You must rouse into people’s consciousness their own prudence and strength, if you want to raise their character.” – Luc de Clapiers, Marquis de Vauvenargues

Endnotes.

¹ Commentary & Citation: I have attended the Shen Yun show twice in 2016 and 2018. I remember being delighted – it is a fantastically talented act – but I also remember being annoyed at the *dues ex machina*. Other times, I said, that’s how stories were told in that culture, and should be accepted as representative. Some had less kind reactions:

- ✓ “Some people who go to the show complain they didn’t know what they were in for. Because nowhere in the effusive advertisements is it mentioned that Shen Yun has a political bent. Shen Yun translates to ‘divine rhythm,’ and according to the show’s website, the artists who put on Shen Yun practice Falun Gong, also known as Falun Dafa, a belief system that encompasses meditation, tai chi-type exercises, and ‘strict

morality’ (smoking, alcohol, and extramarital or same-sex sexual relations go against the teachings).” – Alix Martichoux, “You’ve seen the ads. But what’s the deal with Shen Yun?” SF Gate, February 6, 2019.

- ✓ “Many people posting reviews on Yelp weren’t as eloquent. ‘Be warned: Religious sermon!’ reads a Yelp review from someone who saw the show in Fresno. ‘I WALKED OUT as soon as anti-evolution statements were made on the screen. False advertising!’ ‘I rate this a Zero star. This show is purely CULT PROPAGANDA. Do not waste your money and time for this,’ said Ron F. from Pittsburg, Calif.” *Id.*, CAPS IN ORIGINAL.
- ✓ “The Chinese government is not a fan either. The practice of Falun Gong is forbidden in China and its members are routinely persecuted. In condemning the ‘so-called ‘Shen Yun’ performance, the embassy’s website calls Falun Gong a ‘...cult that seriously harms the society and violates human rights, and is a cancer in the body of the modern and civilized society.’” *Id.*
- ✓ “The Guardian reports ‘there’s no evidence of the kind of coercive control that the [cult] label suggests.’ Besides, it’s not like the Chinese government has a stellar human rights record. According to Shen Yun’s website, many of the dance company’s members were persecuted and tortured for practicing Falun Gong in China.” *Id.*

² Commentary & Citation: This theme was revisited in The Dark Crystal: Age of Resistance series (2019): Are the Skeksis ‘evil’ because they feed on the essences of other species?

- ✓ Before this, Stargate Atlantis explored the idea via the Wraiths; though natural enemies of everything they can feed on, are they ‘evil’: “The Wraith too feed on humans, treating them akin to livestock and regarding the act of feeding as nothing more than natural predation.” – from Wikipedia article, “Wraith (Stargate).”
- ✓ If the Wraiths are evil because they keep humans as livestock to feed, then the concept of evil is demonstrably a *subjective* human one and *not a universal or objective* concept like the theologians have been arguing for two millennia. To cows and pigs we are evil, but theologians insist that they cannot know that concept.
- ✓ It is thus at the end of the Twilight Zone episode, “To Serve Man” (1962), Chambers looks into the camera and asks: “How about you? You still on Earth, or on the ship with me? Really doesn’t make very much difference, because sooner or later, all of us will be on the menu... all of us.”

³ Commentary & Citation: Here is the odd thing. Although Joseph Lancaster and his system publicly rejected corporal punishment of students (however, it was learned later that Joseph Lancaster secretly beat several boys), apparently the practitioners became quite creative in finding new punishments. Thus, freed from the non-thinking traditional, accepted school punishment, they devised new punishments that may have been worse:

- ✓ “The poet Robert Southey noted that, despite his opposition to corporal punishment, he would rather be beaten than subjected to Lancasterian discipline” (Wikipedia, *ut infra*).

Information from Wikipedia article, “Joseph Lancaster,” May 31, 2019, some citing to Pen Vogler: “The Poor Child’s Friend,” History Today, February 2015, pp. 4-5, free at <https://www.historytoday.com/poor-child's-friend>.

- ✓ Whether it is true or not, whether or not there is evidence that he beat several boys for amusement, the fact that it is repeated in publication now speaks to the public perception of the Lancasterian system. I would assume that Ms. Vogler had sufficient sources to make that scandalous claim. The utilitarian-based Lancasterian system certainly had enemies and rivals who may have published such claims at the time, contrast for example, with the concurrent Swiss Romanticism inspired system of Johann Heinrich Pestalozzi: Mexico replaced the Lancasterian system in 1890 with the Pestalozzian system of education.

This educational discipline, especially methods of peer humiliation, and English class division conformity, along with overbearing post-WWII parenting, through the eyes of a child, is reflected in Pink Floyd’s The Wall (1979).

- ✓ See context discussion, Wall of Understanding, 2 Dreamtime, p. 152, *supra*.
- ✓ The military, who still uses a Lancastrian system in basic training of recruits has slowly eliminated corporal punishment, but has substituted other creative punishments in boot camp (e.g., the sand pit, or holding out your rifle or canteens at arms-length for extended periods of time, peer humiliation, physical exertion on the ‘quarterdeck’ and of course, the classic “do pushups until I get tired of watching you”).
 - See Gradgrind discussion, 1 Colleges, p. 463, *supra*.

⁴ Commentary: The problem with Ma Barker is this: Despite the fact that the FBI tried to frame her as a criminal mastermind of the gang, which she very likely was not, to justify her death during the final shootout, she is not a sympathetic character or innocent bystander: Her sons were thugs, kidnappers, thieves, and murderers, and whatever blame attaches to a parent for the actions of their adult children after they are loosed upon the world, attaches

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especially to her; additionally, she probably knew some of what they had done, probably consciously provided social cover for them, and benefited from it, at the very same time that she was also hostage to the situation she helped create. She may also have been aware or suspected that her sons and their accomplices killed her live-in lover.

- ✓ As to who killed Ma Barker, we will never know because the forensic evidence was not preserved or analyzed as we do now; so a historical drama writer can make whatever ending is suitable; there are two branches, either she fired at the FBI from a window or she didn't, and either she was shot by the FBI or she was shot by her son for bringing the FBI to the house or to avoid capture.

⁵ Commentary: If you wanted to create a truly 'evil' alien intelligence, this is your framework. This describes fairly well the 'bad guys' in almost every work of fiction and history. What was the thought process of each *individual* Mongol warrior or Crusader when they were massacring, torturing, raping people and burning and pillaging cities?

⁶ Commentary & Citation: In The BeastMaster television series, the Sorceress turned the Beast Master's two ferret pets into humans so that she could interrogate them. All they wanted to do was look for food, and they kept talking about looking for food, she didn't get much out of them because they didn't know anything but looking for food. In the animated movie Ice Age 2 (2006), they made the mistake of asking what vultures think about...

⁷ Citation: See 2 Culture, EN 10, pp. 376-377, *supra*, for full quote.

⁸ Citation: Merriam-Webster online dictionary does not have an entry for "noogenesis" but does have an entry for the related term, "noosphere" (first use, 1930). However, Wikipedia has an article on the subject, which states, "Noogenesis was first mentioned in the posthumously published in 1955 book The Phenomenon of Man by Pierre Teilhard de Chardin, an anthropologist and philosopher, in a few places," followed by a paragraph from the book. Pierre Teilhard de Chardin also invented the term noosphere which, according to Wikipedia article "Noosphere," was published in his 1922 book Cosmogogenesis (meaning that Merriam-Webster is wrong on the first use).

- ✓ All of this traces back to a Soviet mineralogist and geochemist, Vladimir Vernadsky, who was born and raised in the Russian Empire of the late 19th Century (d. 1945), and likely was exposed to Russian Cosmism of that time. He in turn, popularized in his 1926 book, the term "biosphere," coined by the English-Austrian (Saxon) geologist of the Alps, Eduard Suess in 1885.

⁹ Commentary: Sometimes, I get the feeling of a circle closing, of things 'coming round'; the title of this work has not changed since 2006-2007 (about 13 years now) and that was only to add the second part, Day Million to Gestalt Genesis (I remember a specific conversation related to this). Gestalt Genesis has been in the title since about the turn of the millennia, about 18-19 years as of 2019. The preceding section was not written to provide justification for the title, I was simply following the logic process of the argument. It just happened to work out cutesy. I am not playing any drama game, but perhaps humans have a "weird circle fixation" (Steven Strogatz, "Why Pi Matters," excerpt, The Big Bang, *supra*), a 'pre-destiny' or 'predilection' to seeing circles connecting our lives, and sometimes (like conspiracy theories), it is actually true. Is drama imitating life or imitating how we think life is?

- ✓ It has been about 30 years, give or take a year, since I rescued the Clarence Marsh Case book from the garbage pile in the rain in the alley behind the museum; I believe I might have read the intro or parts of it, sometime in the past, but the orders of natural phenomena didn't click with me until much later. From there, exposure to genesis studies terminology via the internet in 2017-2019 synthesized the argument.
- ✓ Without the book dating from 1924, I may never have heard of the 'order of natural phenomena' as the idea does not seem to be on the internet currently and I have not seen it elsewhere in any book. Matter-of-factly stated, that is all that can be said, the rest is an interpretation.

¹⁰ Commentary: The cleverest use of the dead in fantasy – sorry Mr. Tolkien – was Stephen R. Donaldson's Second Chronicles of Thomas Covenant. Because Lord Foul had tricked Covenant (or maybe Covenant is just a fool) into breaking the barrier between the living and the dead by calling forth a long-dead, ancient hero, Lord Foul was unable to kill Thomas Covenant in the end (White Gold Wielder, (1983)). By comparison, Tolkien's Army of the Dead arriving just in time at the Battle of Plennor Fields (at least in the movie) where they swept over the bad guys feels a bit contrived, if naturally satisfactory as an ending to the dramatic battle.

¹¹ Citation: The Wikipedia article cites to: Keating, Joseph C. (2002), "The Meanings of Innate," The Journal of the Canadian Chiropractic Association, 46 (1): 4–10, PMC 2505097.

¹² Commentary & Citation: However, falsifiability is very slowly losing ground in science, see FOURTH DEGREE OF SEPARATION, 3 Fallen to Earth, p. 1543-1544, *infra*. What does this mean for vitalism? For GGDM?