

The Scarcity Hypothesis

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In this paper I argue that economic, psycho-behavioral, anthropological, philosophical, biological, mathematical and physical properties of reality, inclusive of the *External Reality Hypothesis* (ERH) and *Mathematical Universe Hypothesis* (MUH), all share a unitary connection through ontic characteristics of scarcity; and are relatable through observable historical and cosmological evidence. The emergent geometrical properties and the implications with regards to the predictive capabilities of such a system are then explored with emphasis on economic and social theory.

During a brain-storming session reflecting on the ontological nature of scarcity I stumbled on to something.

For the record I'm a computer scientist. I've worked for Microsoft, Electronic Arts, and, in general, am about as levelheaded and skeptical as they come. I previously held objectivism was the only reasonable philosophy a scientist could use in day-to-day life without otherwise sacrificing clarity of thought. Furthermore as a rational individual I believed the idea of a God, or gods, was unknowable making me agnostic.

Now what if I told you that through philosopher Jean-Paul Sartre's view of scarcity (the idea that a class system is embedded in the very nature of reality – *i.e. life as an exigency, life as a value to be produced and reproduced, and life as a good to be consumed*)^{1,2} it's possible to see that *all things* are driven by the notion that the "lack of something causes its pursuit?" Or worded more strongly, "the lack of something necessitates its existence."

You might ask, "Why is this worth my time and why should I care?" Simply because this provides a roadmap not just for humanity's future, but any sentiences beginning and end.

In mathematical terms "life as a value to be produced and reproduced" is a ratio of "life as exigency" (or basic survival) and "life as a good to be consumed." Put another way *life as exigency* is represented by cosine, *life as a good* is sine, and *life as a value* is the tangent function. How do I know these functions map to a sinusoidal period?

Consider if we're to take the long view of what will happen to humanity, assuming we don't kill ourselves, eventually we'll hit the point where we'll expand out and control our solar system (Kardashev's type 2 civilization). Following this we'll work towards gaining control over

our entire galaxy (type 3 civilization).³ Then finally when we've mastered our universe, converting matter to energy and energy to matter, perfectly recycling all transitions, we'll hit a type 4 civilization.

It's at this point humans will be omnipotent. A form of god if you will. What comes after that? Following that is the notion of psychological scarcity.

Since nature won't have the ability to impose itself on us humans will primarily be interested in the creation of beauty, exploration, and learning. So the only scarcity that will exist will come in the form of "lack of knowledge" and "lack of being able to be in all locations." I'm more than happy to speculate how I think this will occur, but for the moment consider what happens at the end of "lack of knowledge" and "lack of being able to be in all locations."

At that point we'll be omniscient, omnipresent, and omnipotent. So the only thing that will be scarce is "the lack of something."

If you can know all things, be everywhere, and control all things what then? I see several possibilities but the most obvious are either a) start over, hit the reset button, or b) become the vessel of a new sentience or universe.

Which is to say the cycle starts all over again. Even if the circle isn't the idealized version of this periodic function we're at the very least looking at something as represented in a logarithmic spiral.

Now I've written all of this because it exposes something very important. It shows key points in any sentience's existence through trigonometric functions.

(See Fig. 1 and Addendum)

We are approaching point (d) on the graph in Fig. 1 (0 exigency, ∞ value, -1 good). Meaning we're very close to

¹ Personal crspd. (3-18-2009). "Scarcity & Class Systems". <http://tinyurl.com/scarcity-class-system>

² Catalano, Joseph (1996). "Good faith and other essays: perspectives on a Sartrean ethics." Rowman & Littlefield. p. 57. ISBN 0-8476-8088-6. <http://tinyurl.com/96-cat-p57>

³ Kaku, Michio. Ph.D, Physicist (3-26-2008). "Will we ever be a galactic civilization?" [TV Production]. The Circuit. 4min. <http://www.youtube.com/watch?v=vXqbi3kaYxg>

becoming a Type 1 civilization. If this idea is correct, it shows what we need to do to move in to the next epoch.

The most fundamental component right now is getting all people to understand we need to drive down all physical exigency by removing any nature imposed harshness (lack of food, water, and shelter). To do this however implies humanity must somehow create something or become *itself* capable of creating infinite value, to be produced & reproduced, almost to imply some form of sacrifice (receiving less than what is produced) to achieve the greatest possible good for the group (-1). This might come about through robotics, fusion, an idealized government, a global change in conscious-awareness; or perhaps something stranger like a singularity, off-world life or deity-intervention.

But whatever this thing is that causes the change will not only be world altering – it will very likely affect our very nature.

Now I'm writing all this because we have the ability to shape the outcome. This idea represents a road map not just for us now, but for all of time and space. It needs people to advocate as loudly as possible that we need to "reduce nature imposed physical exigency."

This is so extremely important because I suspect if we attain the capability of fundamentally controlling the nature of our planet (type 1 civilization) and we don't provide certain social minimums, despite having a near-perfect understanding of how to provide sustainable living for all people, it will likely result in catastrophic wars. It doesn't take a crystal ball to see these military actions will be much worse than anything we've experienced in the past if only because it gets easier every day for radicalized fundamentalists and governments to attain nuclear and biological weaponry.

The debate in the here and now is still very much focused on, "is capitalism better than socialism, marxism, barter, etc?" This theory shows no economic system is better than any other, but rather that they each have a time and place. It seems the economic motivator that will get us through the hump will very likely be capitalistic, but this greed-based incentive must be accompanied by socialistic institutions. I've tried explaining to others that humans engage in 3 types of economic behavior. (1) Personal gain, (2) working towards societal goals stipulated by the group (things like NASA), & (3) providing a social minimum (e.g. food-stamps, etc).⁴

⁴ SH has ramifications for modernizing economics such that it doesn't involve putting all eggs in one basket making an either-or pick between 100%-reserve or a fractional-reserve system (<http://tinyurl.com/reserve-banking>), mitigating numerous degenerative scenarios. A more technical write-up is available titled "Sane Economic Reform."

Large institutions such as NASA (which no private investor could afford) provides humanity hidden rewards that are soft-sells because they don't result in immediate economic return. Pure capitalism would kill these sorts of organizations.

Likewise if technology is available to provide all people a basic improved social minimum why not be our brother's keeper and provide the service free of charge? Or to express this idea in a more easy to grasp manner, "What sort of economy would exist if robots were our primary laborers?" We're getting closer to this every day as robotic work-forces are increasingly used in assembly. When we eventually come up with a way to reliably and sustainably provide food (vertical farms / hydroponics / etc), water (atmospheric water generators), & shelter to all people for little to no effort. An economic change fundamentally needs to occur because why should anyone have to pay towards something that is freely, sustainably, and abundantly available?

Needless to say some will disagree and others will dismiss this out-of-hand as crazy, but I'm writing this with the sincere hope you'll reflect deeply on the concept before coming to a knee-jerk conclusion. Truly grasping this requires a small leap of faith and a large amount of vision.

So, please, if you can direct your energy towards promoting this – the idea needs its advocates.

0 exigency, is the goal (removing all nature imposed exigency)

Infinite value, is the means (which could happen many ways)

-1 good, is the philosophical result (the greatest possible good for the group).

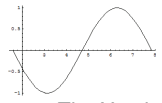
This is so important because this entire graph expresses a potential new view of our origins and where we're going. It suggests we can look at the universe as a probability machine creating all possibilities. It suggests no religion is wrong. It hints actually that omni-theism is a more worldly view in the sense that both atheism and theism can both be correct without creating a paradox. Which is to say if this whole system is right we may in fact be the first creation to come from nothing, but if we don't kill ourselves we will inevitably become the Gods we've dreamt up. So the question is, "Are we the first or simply another iteration of this process?"

This is a big idea and it needs its voice in other people. I hope you can see the big picture,

Dustin J. Darcy

The Four Seasons of Scarcity & Sentience [S.H.]

God-hood



X-axis

The X-axis (cosine) represents exigency.

Negative exigency represents *nature* fundamentally imposing exigency on people. The positive X-axis reflects people *choosing* exigency (exploration).

Early-Homo (~5.5 million years ago)

(~179.977054... °)

Man likely evolves from a non-sentient lifeform having only the capabilities of perceiving life as an imperative. Gradually progressing from "wild-men" to noble savages (Ardipithecus / Homo habilis) and eventually, at the 'foundation of society,' becoming a society of hunter-gatherers. This simple life is, in its most primal forms, "service to self" due to the value produced benefiting 1 person. However this value (< 0) often does not sustain 1 individual.

Foundation of society (~2 million years ago)

Humanity for the first time forms a society of people who work together (Calabrian period – Homo ergaster). These small groups live their lives reproducing a value, not just for themselves but for those in the group. The groups are so small no one person consumes more than they produce.

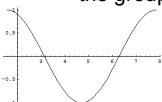
Life is neither a value or a good because everyone contributes evenly or dies due to the harshness of physical reality.

Y-axis

(~13.73 ±0.12 billion years total)

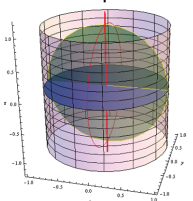
The Y-axis (sine) represents "life as a good to be consumed."

Q1 & Q2 (positive) represent life as a good for the individual and the descension in to Q3 & Q4 (negative) represents the transition of life as a good for the group.



Z-axis

The Z-axis represents consequence.



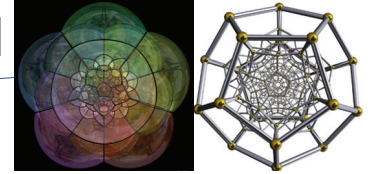
Scarcity (n. *insufficiency or shortness of supply*), according to Jean-Paul Sartre, is ontologically composed of three core precepts, life as:

- X = Exigency** (imperative)
- Y = Good** (to be consumed)
- Tanθ = Value** (to be produced & reproduced)

Moral reasoning and physical / psychological scarcity are the inputs. At its heart *scarcity* implies that the lack of something causes its pursuit or necessitates its existence.

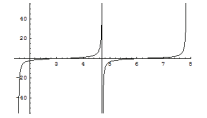
It's at this point that *all* scarcity has reached 0. We are lacking no knowledge – omniscient, the ability to convert matter to energy & vice versa – omnipotence, and the ability to observe all things – omnipresent. At this point we either start over or become the vessel of a new sentence / universe.

From this a cycle emerges creating all possibilities & probabilities as an expanding N-ary n-spheroid /w possibly the bone structure of a dodecaplex.



Tanθ

The tangent function (life as value) is a function of good / exigency. Which indicates the proportion of those serving by the number of those receiving. Representing the transition from life as *overcoming self / nature* (b to d) to *overcoming group / choice* (d to b) (see Fig. 5)



Type 4 civilization – Universal control

Physical scarcity reduced to 0. Humanity has the ability to convert matter to energy & energy back to matter perfectly recycling all transitions & can replicate or create anything. Only scarcity left is psychological.

Kardashev's Type 3 civ.

A society that controls the resources of a galaxy

Fig. 1

Kardashev's Type 1 civilization

(will likely occur some time between now and 2109 - 2209)

A society that harnesses the energy output of an entire planet. Exigency of 0 implies the end of nature enforced scarcity locally but global to humanity. However since value (to be produced & reproduced) reaches ∞ it also suggests all people must somehow produce more than they each collectively receive. It's this that creates greatest possible 'good to be consumed' for the group (-1).

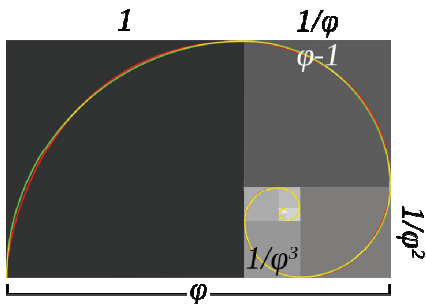
0 exigency could happen many ways – through tech like a robotic workforce (∞ value), fusion, hydroponics, vertical farms, etc.; alternatively a single entity could dominate through financial might coercing all people to work "infinitely" hard; on the flip-side massive inequality between rich / poor may result in super-powers employing Marxist ideology; perhaps a near-perfect quasi-capitalistic / socialistic system emerges, or something stranger may occur (singularity, off-world life, deity-intervention).

The subtle implications are we must recognize that there are 3 types of economic behavior. Personal gain, working towards societal goals stipulated by the group (e.g. NASA), & providing a social minimum. At present the world largely applies the concept of "service to self" as the best fitness function for determining efficiency. It's paradoxical through greed we assume the greatest good for society. Consider, what sort of economy would exist if robots ran things? Would humans need to work to receive food even though little to no human effort would be needed to produce it? I suspect due to capitalistic popularity, as it winds down owing to the value produced servicing a select few rather than the group, it descends from being a value to the majority (i.e. richest 2% own half world's wealth) to infinitely high for the individual. Upon crossing to a post 0-exigency world efficiency won't be as important because society through efficiency over time makes all people unnecessary. Changing life from service-to-self to service-to-others.

Rate of Speed per Quarter

It appears speed is reflected in a logarithmic spiral. Q2 representing ~13.728 billion years & Q3 showing ~2 million years.

"Kardashev estimated that any civilization growing at a modest rate of a few percent per year in energy consumption will progress rapidly from one type to the next, within a matter of a few thousand years to tens of thousands of years." (Physics of the Impossible, p146). Further verifying the notion of increasing speed per quarter.



Economic Implications

If this theory is correct no economic system is more right than any other (capitalism / barter / communism / etc.) because physically exigent circumstances as dictated by nature (coupled with intelligence) determines the appropriate model. This is compelling because it implies no system is more fit than another, but rather that each has its time and place and to varying degrees. This would explain why the economic parasite-host and master-slave metaphor changes over time from fascism, to socialism, capitalism and marxism. They each contain within them the new face to the same evil – subjective morality (due to physical scarcity) and greed (due to psychological scarcity).

Physical Considerations

Scarcity runs inversely against the laws of thermodynamics. This intuitively makes sense since all creatures fight entropy to survive. It also suggests that the 2nd law of thermodynamics may fundamentally impose a tight upper-bound at (a) in Fig. 1, implying we may be stuck in the *Scientism universe* seen below in Fig. 3. However most physicists agree the early universe was highly special in that it was initially in a low entropy state. Suggesting, perhaps, that the 2nd law was somehow overcome. There have been a number of ideas exploring how this might occur (M. Kaku's conjecture that cosmic asymmetry may break conservation of energy in "exotic & unexpected places" (Physics of the Impossible, p268); R. Penrose's Weyl curvature hypothesis; Asimov's 'The Gods Themselves' fiction describing wormholes connecting parallel universes; F. Dyson's open universe model described in "Time without end;" F. Tipler's Omega Point; etc.) All these ideas provide ways for a sentence to fight against nature enforced exigency and (hopefully) overcome it.

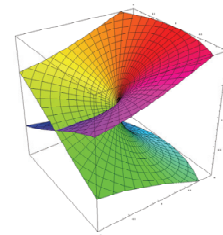
Theological / Eschatological Thoughts

The primary graph (Fig. 1) expresses a potential new view of our origins and where we're going. It suggests we can look at the universe as a probability machine creating all possibilities. It suggests no religion is wrong. It hints actually that omni-theism is a more worldly view in the sense that both atheism and theism can both be correct without creating a paradox. Which is to say if this whole system is right we may in fact be the first creation to come from nothing, but if we don't kill ourselves we will inevitably become the Gods we've dreamt up. So the question is are we the first or simply another iteration of this process?

Shape of the 4 Seasons in 3D

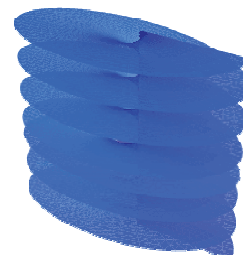
Since there appears to be a logarithmic change in speed it's likely that movement follows along some curvilinear surface, in- or outwards.

Possible shapes for this might be reflected in a Riemann surface of \sqrt{z} , projection from 4dim $C \times C$ to 3dim $C \times Re(C)$, color is argument (right-top image)



Or,

Perhaps a better analog is modeled in the analytic continuation of the Lambert W function (right-bottom), showing the imaginary component in the complex plane.

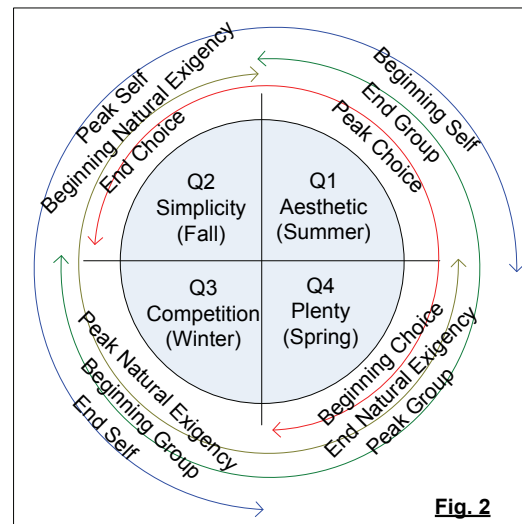


Philosophical / Social Importance

As Thich Nhat Hanh noted, "Until we can name the oppressor and the oppressed within each one of us, we are not ready to do social justice." This graph (Fig. 1) represents all stages and types of "oppression" not just on a macro-, but micro-scale. It is through an understanding of scarcity that we see what comes next.

Cyclical Iterations

One of the fascinating characteristics of Fig. 1 is it suggests each period goes through a sequence of 3 quarters to complete a particular cycle. So as seen below in Fig. 2, Q2 (the inception of the universe) represents peak self, with "self" starting in Q1 and ending in Q3 (where we are at present). It's important to note that even though the positive y-axis represents self, the close of Q2 doesn't mean the end of "self" as early humans segued to "group." Rather it marks the transition to a new paradigm due to physical scarcity / evolutionary pressure pushing us in that direction. This hints each cycle leads from one philosophical goal to another by overlapping with each other. So as a sub-cycle ends this indicates its attainment.



Cyclical Iterations (cont.)

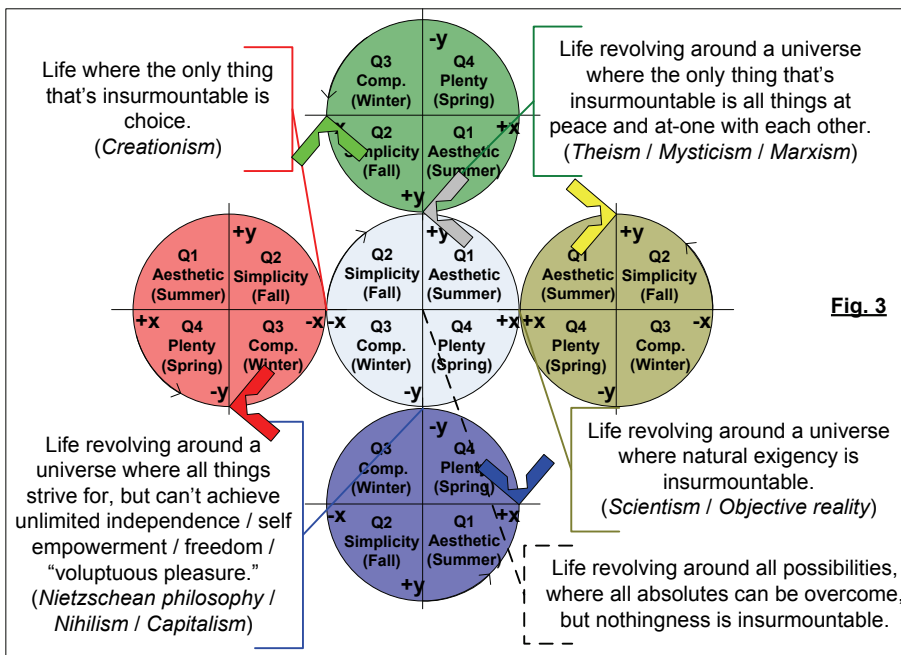


Fig. 3

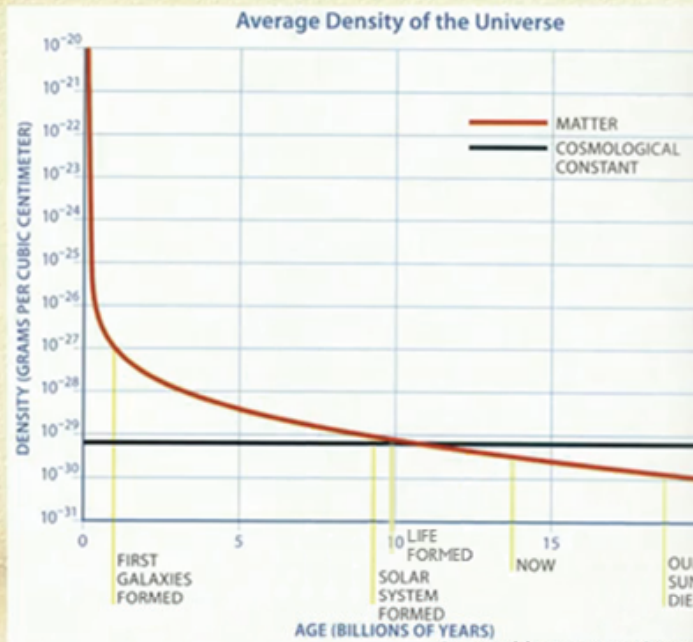
The diagram on the left (fig. 3) shows that the cardinal positions on the central circle represent the ideals of all major philosophical schools and beliefs. It may not be possible to know which school represents our reality, but the rotation of an outer-school counter-clockwise towards its arrow (or start) indicates a parallel alignment with the central circle's degree rotation. Interestingly the center philosophy moves clockwise suggesting it pushes the others, like gears on a clock, forward; or put another way, the outer schools mimic the axial orientation of the central school's degree rotation behaving like a magnetic repellant.

Of all the possibilities that best represent our existence based on the evidence I'm inclined to say that, in order of likelihood, we either live in the scientism universe or the central reality (Fig. 1).

'A Universe From Nothing' by Lawrence Krauss, AAI 2009

(With several corrections & 1 addition)*

Coincidence or Design?



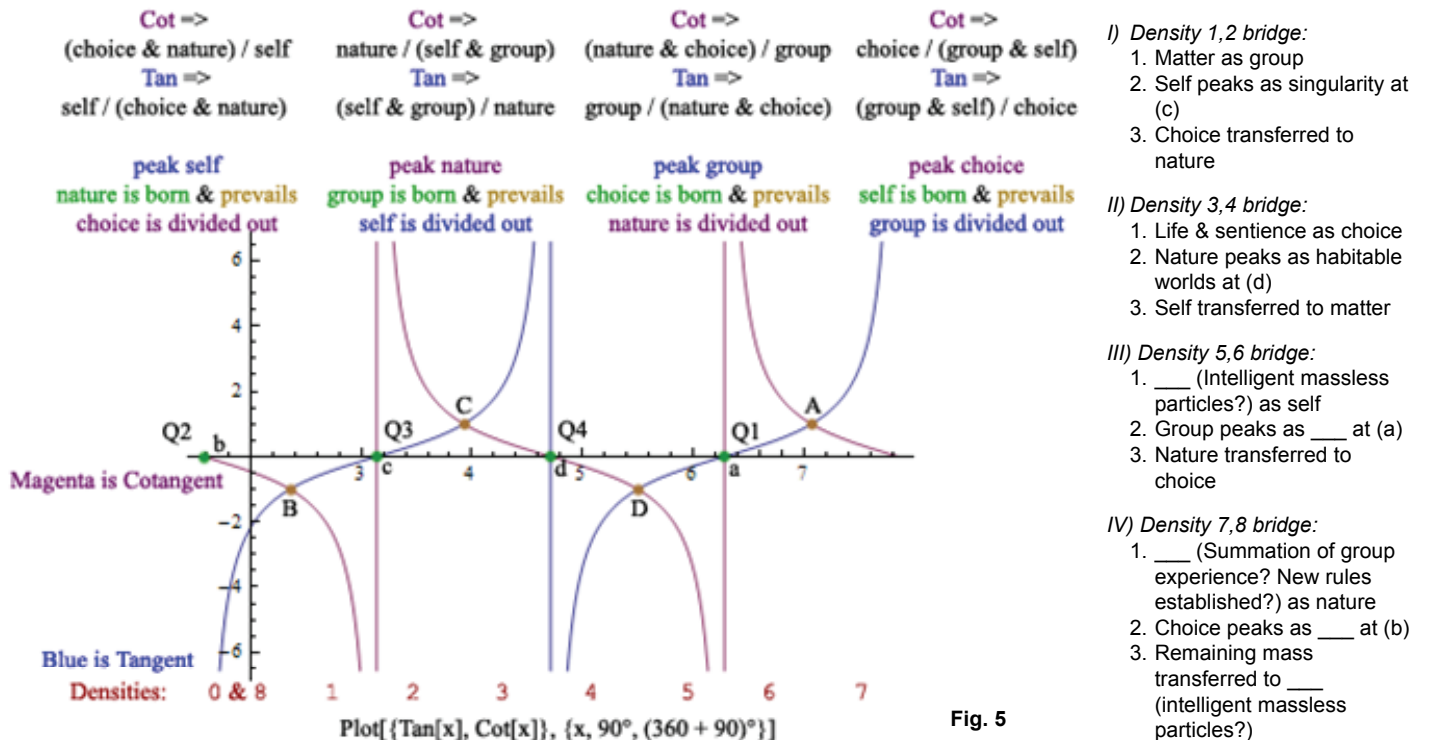
* The approximations for when the "solar system formed" (roughly the same time-period that Earth coalesced around 9.2 Ga), the point where we exist "now" (~13.73 billion years), and when "our sun dies" (~17.7-18.7 Ga) were off in the original diagram by about 2 billion years. There's still a great deal of contention over when the first galaxies formed, but there's evidence to suggest this happened as early as after 1 billion years. Though more recent research is showing fully formed galaxies at about 2.7 to 3 billion years following the 0-date. Due to this variability the mapping was left as originally plotted.

0:45:38 / 1:04:52

<http://www.youtube.com/watch?v=7Imv1S8PIIo>

The above graph, "Coincidence or Design," is a slide taken from a 2009 lecture given by theoretical physicist Dr. Lawrence Krauss. It shows that the density of matter as the universe expands appears to go down as 1 over the volume. However the plot also bears obvious similarities to the cotangent function beginning at 0, 360, & 180 degrees.

One surprising feature of this theory is it not only matches the above geometry (i.e. peak nature in Q3 as seen below in Fig. 5), but it potentially explains why we live at a time when the energy density of empty space is roughly the same as the energy density of matter. If this theory is correct at point (d) choice, meaning *capability to enact independent of nature*, was born. This can easily be seen as a description for life or sentience. Also notice this scarcity hypothesis suggests we're heading through Q3 to Q4 on our way to point (D) where *choice* fully appreciates. Later as nature approaches being divided out at (a) we see something very similar to what's described in Roger Penrose's Weyl curvature hypothesis (arxiv:1011.3706). The conformal factor Ω tends to 0 as time and matter evaporate (arxiv:1009.4698v1). This suggests sentience in the far-flung future will manifest in a manner similar to Fred Hoyle's "Black Cloud" (see Freeman Dyson's "Time without End") and perhaps eventually as massless particles. In this way the physical universe can be seen as a metabolic process.



- I) Density 1,2 bridge:
 1. Matter as group
 2. Self peaks as singularity at (c)
 3. Choice transferred to nature
- II) Density 3,4 bridge:
 1. Life & sentience as choice
 2. Nature peaks as habitable worlds at (d)
 3. Self transferred to matter
- III) Density 5,6 bridge:
 1. ___ (Intelligent massless particles?) as self
 2. Group peaks as ___ at (a)
 3. Nature transferred to choice
- IV) Density 7,8 bridge:
 1. ___ (Summation of group experience? New rules established?) as nature
 2. Choice peaks as ___ at (b)
 3. Remaining mass transferred to ___ (intelligent massless particles?)

Fig. 5

If overcoming nature is assumed to indicate omnipotence. Then there are 3P3 = 6 solutions for {self, choice, group} as seen in Fig. 2.

I.E. Omni- :

1. Present, Scient, Benevolent
2. Present, Benevolent, Scient
3. Scient, Present, Benevolent
4. Scient, Benevolent, Present
5. Benevolent, Present, Scient
6. Benevolent, Scient, Present

The best matches for Omni-:

1. **Present** – are overcoming Group or Self
2. **Scient** – is Choice
3. **Benevolent** – are Self, Group, or Choice

Conquering choice is likely what results in omniscience because if a sentience knows all things then there aren't any more choices to be made. All outcomes are known.

Creating a matrix:

	Group,	Self,	Choice
Prese:	1,	1,	0
Scient:	0,	0,	1
Benev:	1,	1,	1

To whittle this down consider, how can an entity know all things if it's not with all things? Thus one must overcome self to be a part of all things, not separate from all things.

However it can be argued understanding and realizing self allows for benevolence. The question then becomes is maximizing self such that "benevolent > presence" or "presence > benevolence?" The way to answer this is to ask, "Is empowering the entire group more benevolent than satisfying self?" Clearly enabling all things is more beneficent than the actualization of the individual if only because it's quantitatively greater. Also elevating the group involves satisfying all selves. Thus:

	Group,	Self,	Choice
Prese:	0,	1,	0
Scient:	0,	0,	1
Benev:	1,	1,	1

So through process of elimination:

	Group,	Self,	Choice
Prese:	0,	1,	0
Scient:	0,	0,	1
Benev:	1,	0,	0

Then starting in Q2, as seen in the graph above, the pattern is Omni-:

Potent, Present, Scient, Benevolent

Interestingly 4P4 (or 4! / (4-4)!) indicates a total of 24 total permutations. Meaning there are 24 possible ways a sentience could evolve to attain complete God-hood. Counting different starting universes gives 24*4 = 96 possibilities. If achieving an omni- level takes more than 1 full-cycle there are infinite combinations, but they'd still be divisible by the speed-templates as elaborated on in the right column. The progression starting from Q2 (assuming things come from nothingness), derived from Fig. 2, is:

- 01-03 (Q2-Q4), Overcoming nature (omnipotent)
- 04-06 (Q1-Q3), Overcoming self (omnipresent)
- 07-09 (Q4-Q2), Overcoming choice (omniscient)
- 10-12 (Q3-Q1), Overcoming group (omni-benevolent)

Progression from Q1 (assuming things always existed) is:

- 01-03 (Q1-Q3), Overcoming self (omnipresent)
- 04-06 (Q4-Q2), Overcoming choice (omniscient)
- 07-09 (Q3-Q1), Overcoming group (omni-benevolent)
- 10-12 (Q2-Q4), Overcoming nature (omnipotent)

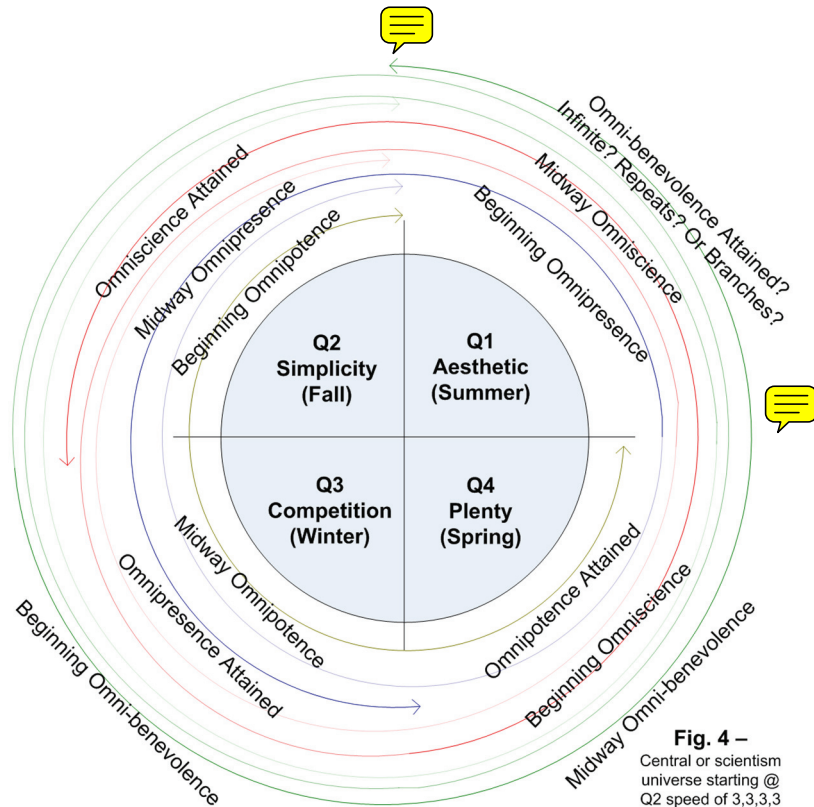


Fig. 4 – Central or scientism universe starting @ Q2 speed of 3,3,3,3

Progress is very likely represented by which "universe" (see Fig. 3) a sentience exists in. For instance, if a sentience starts in the below universes progression would likely proceed as follows:

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Group universe – Omni-benevolent, potent, present, scient</p> <p>2. Choice universe – Omni-scient, benevolent, potent, present</p> | <p>3. Self universe – Omni-present, scient, benevolent, potent</p> <p>4 & 5. Natural & Central universe – Omnipotent, present, scient, benevolent</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The other 20 possibilities can be calculated by varying the speed of attainment of any given omni-level. In the above examples a speed of 3 is assumed based on natural symmetry (Fig. 2) and logic, due to positions as elaborated on in Fig. 1 (i.e. point a indicates end natural exigency implying omnipotence). The overriding speed templates, independent of starting universe, are:

- a) x,3,3,3 b) x,1,1,1 c) x,3,2,1 d) x,1,2,3 e) x,2,3,2 f) x,2,1,2

The slowest reality starting from Q2 (nothingness) would then be the group multi-universe set which has the following speed layout:

- a) 4,3,3,3 b) 4,1,1,1 c) 4,1,2,3 d) 4,2,3,2 e) 4,2,1,2 f) 4,3,2,1

Since our species has no omni- abilities and we've already passed a minimum of one quarter this rules out the speed of one set (6 permutations). Through logic it's possible to rule-out additional sets based on humanity's continued goals.

For example, our primary function in day-to-day life is overcoming nature. While this involves working together, attaining new knowledge, and minimizing our species' primitive non-benevolent tendencies, these goals are subservient to our desire to maximize our ability to have choice (meaning capability to enact independent of nature). Due to this our first goal is likely omnipotence. Since we're close to completing Q3 we can rule out the speed of two set (6 permutations focused 1st on achieving omnipotence). While this leaves the group multi-universe template as a possibility (implying omni-benevolence as the 1st goal & the 4,2,3,2 speed layout) we can assume based on our current direction that the set of 3 is the most likely candidate for our reality.

That said even though logic and Fig. 1 point towards a progression of,

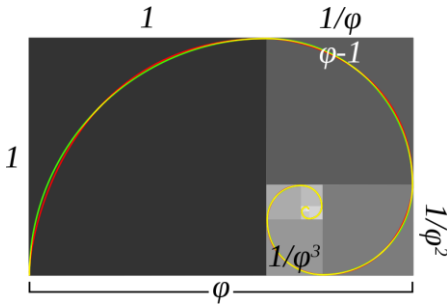
Omnipotence, Omnipotence, Omniscience, & finally Omni-benevolence.

it's important to note:

1. There may be an upper limit of what can be achieved (i.e. might not be possible to be omnipotent, omnipresent, omniscient, and/or omni-benevolent).
2. The orderance is dependent on the starting universe a sentience is begat in.
3. These things may occur simultaneously in which case all bets are off.

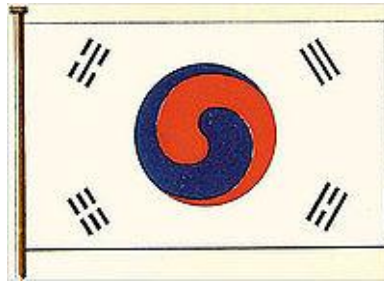
Curiosities

Rate of Speed per Quarter



South Korean Flag circa 1882

(U.S. Navy book Flags of Maritime Nations in July 1882.)



8 Trigrams of the Bā gùa (Earlier Heaven, 2852 - 2737 BCE)

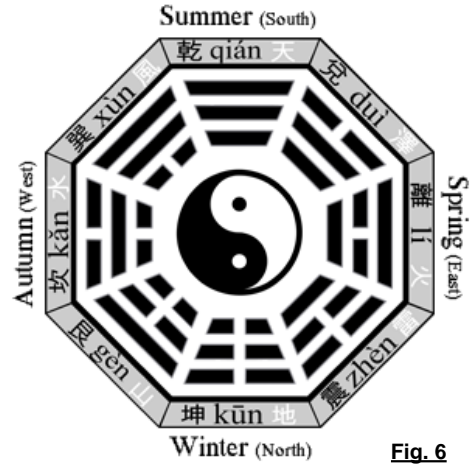


Fig. 6

Cyclical Iterations

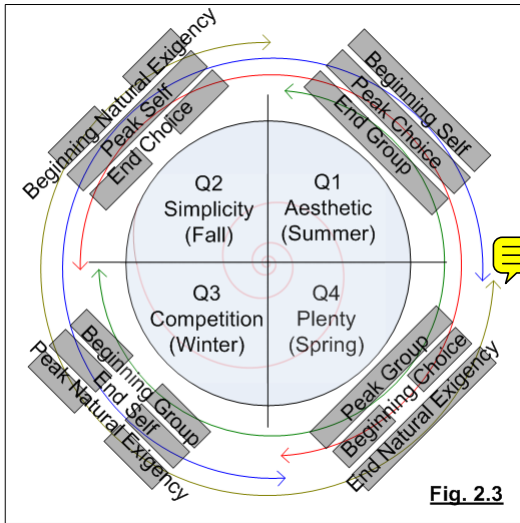


Fig. 2.3

If you notice Fig. 2, from the addendum, bizarrely enough mimics the three bars used to create a trigram. Even more surprising is that the positioning happens to match the orientation of the seasons as specified by the "Earlier Heaven" bā gùa. This is further illustrated by its' usage on the South Korean standard, seen above. It's also noteworthy that the Taeguk spiral found on the middle of the flag was derived from graphing the length of the sun's shadow. Indicating the tradition has some basis in physically observable phenomena.

Stepping back for a moment it's fascinating to contemplate the sequences when contrasted against the notion of "beginning," "peak," & "end" as they potentially relate to Yin versus Yang. Yin (broken) is usually associated with dark, hidden, passive, receptive, yielding, cool, soft, and feminine. Whereas Yang (solid) is illuminated, evident, active, aggressive, controlling, hot, hard, and masculine. Since there are 24 ways to lay out the concentric-circles in Fig. 2 it's possible to arrange Q2 in such a way that "Peak Self" corresponds to Yang. Of these 24 arrangements there are only 4 that always guarantees "Peak" in a Yang-role when Yang is available. The *Later Heaven* bā gùa produces 6 matches and when joined against *Earlier Heaven* only 2 permutations guarantee "Peak" in a Yang-position. The 1st, seen in Fig. 2.3, follows an {outer, mid, inner, x-gap} order starting from Q2 of {Beg. Exig., Peak Self, End Choice, x} and in Q4 {End Exig., x, Beg. Choice, Peak Group}. The 2nd case incorporates a Q2 layout of {End Choice, Peak Self, Beg. Exig., x} and in Q4 {Beg. Choice, x, End Exig., Peak Group}. It's also worth noting that in the I-Ching, Book of Changes, Yin is 2 and Yang 3. Meaning Q2 adds to 7, Q3 equals 6, Q4 is 8, & Q1 is 9. The numbers 6 & 9, in turn, represent "old" yin & yang and are called "changing lines."

Another oddity is that the universes in Fig. 3 from the addendum seem to correspond to the 5 worlds described in the Kabbalah, Hindu Tantrism, and Sufi-Islamic / Bahá'í cosmology. This similitude is especially true of the worlds (ha-Olamot) expounded on in kabbalistic texts:

- **'Asiyah** is commonly described as 'the world of manifestation' [Zetter, Simple Kabbalah, p90] and is 'characterized as the World of "Action." It is the World in which entities become material or concrete.' [hermetic.com & Vital, "Etz Hayyim"]
- **Yetzirah** is known as the "World of Formation." "Yetsirah" as in "making" ... actually taking whatever matter that was created in the "Briah" & shaping it into the basic elements. [Ginsburg, Kabbalah, p621] 'The world in which we begin to transform raw materials into their potential forms.' [Jacobs, Tikkon (repair) & transformation]
- **Beri'ah** is known as the World of *Creation*. It's 'a World of pure consciousness; Beri'ah symbolizes the Spiritual World ..., & includes the elements of time & space. [Pollack, The Kabbalah tree, p61-62] Beri'ah/Creation contains the essential nature of all those things which are to come into being. Beri'ah is also called "the World of Separate Intelligences." [Scholem, Kabbalah, p117] as it is a world of essences, principles and ideas.' [yasha.net]
- **Atziluth** is "the world of archetypes free from any descent into phenomena," a "World of Unity," infinity & "Nothingness" (Ayin). [Kaplan, Sefer Yetzirah]
- **Adam Kadmon** or "*Primordial Man*" (comparable to the Anthropos of Gnosticism & Manichaeism) is the 5th supernal world. According to Vital, 'the "World of Points", is one of the myriad worlds that exists in the space between the worlds of Adam Kadmon and Atziluth. The Sefirot in this world are *completely independent and disunified* & were thus subject to being shattered during the cosmic catastrophe known as the Breaking of the Vessels.' [newkabbalah.com]

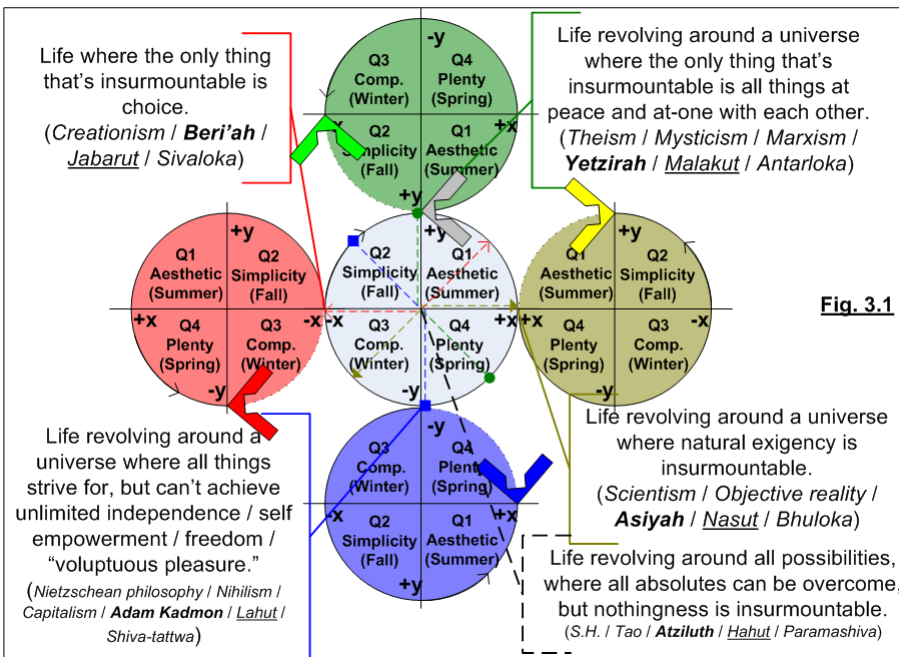


Fig. 3.1

In Sufism & Bahá'í cosmology Alam-i-**Hahut** is 'All-Possibility, non-differentiated and non-determined, indivisibly One, or the Possibility ... of Its own negation or Its own "limitation." [p159] Alam-i-**Lahut** is "Being" or the "sphere of Divine nature." While the individual is a differentiated possibility in Lahut, it is undifferentiated in Hahut, and thus it is possible to say that beyond the personality there is *the Self*... [p160] Alam-i-**Jabarut** indicates the world of power and is often related to the causal world of Western Occultism; suggesting that information precedes manifestation. Jabarut is also referred to as "the world of omnipotence." [p224] Alam-i-**Malakut** is the world of "angels" & "the heart." [Hanif, Bio. enc. Sufis] Alam-i-**Nasut** is the world of humanity, sometimes designated as Alam-i-Ajsam, the world of bodies. [Glassé, The new encyclopedia of Islam]

These similarities persist in Hindu-Tantrism with Bhuloka representing the physical, Antarloka the world-in-between or the mental-emotional sphere, Sivaloka representing the causal plane, Paramashiva as the undifferentiated God-head, & Shiva-tattwa the manifestation. [Subramuniyaswami, Dancing With Siva]

Curiosities II

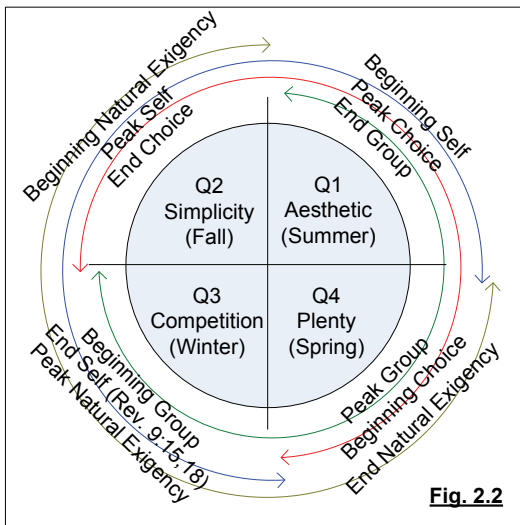


Fig. 2.2



Fig. 7



Another oddity that comes to mind thinking about Fig. 2.2 is that the diagram, which shows *four* wheels, seems to have a relationship to Ezekiel 1:10,15-16,

(10) As for the form of their faces, each had the face of a man; all four had the face of a lion on the right and the face of a bull on the left, and all four had the face of an eagle.

(15) Now as I looked at the living beings, behold there was one wheel on the earth besides the living beings, for each of the four of them. (16) The appearance of the wheels and their workmanship was like sparkling beryl, and all four of them had the same form, their appearance and workmanship being as if one wheel were within another.

This passage is often visually depicted in a manner similar to a human gyroscope like the one seen in Fig. 7. The most well known artistic rendition of this verse is Matthaüs Merian's 1627 *Iconum Biblicarum* seen in the upper-right corner.

Just as this passage ties four disparate properties, somehow, together. SH does the same. While some take Ezekiel's writings as describing a physical object others believe it has a deeper allegorical meaning. As related to SH it seems to expose a highly abstract metaphysical aspect of reality: that all things, no matter how dichotomous, are inter-related and unitary.

If one were to speculate it's possible to match the creatures in Ezekiel chapter 1 verse 10 to the four quarters, or faces, of a circle:

- Adam Kadmon, representing, "primal *man*," would intuitively seem to map to "self," Q2 – *Simplicity* due to the relationship outlined in Fig 3.1.
- The lion, biblically speaking, is often illustratively used to describe the line of David, "And one of the elders saith unto me, Weep not: behold, the Lion of the tribe of Judah, the Root of David, hath prevailed to open the book, and to loose the seven seals thereof" (Rev 5:5); and even as an iconic representation ("A lion has come out of his lair; a destroyer of nations has set out." [Jeremiah 4:7]) seems to naturally correlate with "Q3 – *Competition*."
- The bull, or oxen, has a long tradition in the bible as representing plenty (i.e. Q4). "Where there are no oxen, the manger is empty, but from the strength of an ox comes an abundant harvest." (Proverbs 14:4). Which is likely why in many verses the bull is used as a sin-offering to God (Exodus 29, Leviticus 16) and would explain the abundance of calf-idols during this time-period. (Hosea 8:5)
- And, last, the eagle depicts qualities of far-sight (Job 39:27-29), wisdom (Proverbs 23), boundlessness ("Though you soar like the eagle and make your nest among the stars ... [Obadiah 1:4]), heavenly portents (Jeremiah 48:40, Ezekiel 17), and providence (Exodus 19:3-4, Deuteronomy 32:10-11). The realm of "Q1 – *Aesthetic*" is a time beyond physical scarcity representing a period of knowledge and exploration; or as described in the Judaic Kabbalah, Berī'ah is "the World of Separate Intelligence," essences, principles and ideas. In Islam this period is called Jabarut "the world of omnipotence."

If these mappings are correct this then means "man" corresponds to "self," "lion" to "nature," the "bull" to "group," and "eagle" to "choice." Interestingly out of all the ways to order these four characteristics Ezekiel mentions "man" first (Q2) followed by the "lion" (Q3), "bull" (Q4), and "eagle" (Q1), mimicking the sequence as seen in Fig. 1. This pattern of four recurs at a high-frequency in many other verses. For instance in Daniel 7:3-4 it's written,

(3) Four great beasts, each different from the others, came up out of the sea. (4) "The first was like a lion, and it had the wings of an eagle. I watched until its wings were torn off and it was lifted from the ground so that it stood on two feet like a man, and the heart of a man was given to it.

Notice in Fig. 2.2 that Q2 is composed of "beginning natural exigency," "peak self," & "end choice;" or using the respective biblical mappings the lion, man, & eagle as mentioned above in Daniel 7 verse 4. This is made more curious when one considers that the "wings were torn off" suggesting *end*, the "first was like a lion" hinting *beginning*, and the beast already having "feet like a man" is given "the heart of a man" implying the characteristic is dominant or *peak*. The usage of fours can also be found in Revelation 4:7 when John writes,

(4) Surrounding the throne were twenty-four other thrones, and seated on them were twenty-four elders.

(7) In the center, around the throne, were four living creatures, and they were covered with eyes, in front and in back. The first living creature was like a lion, the second was like an ox, the third had a face like a man, the fourth was like a flying eagle. (8) Each of the four living creatures had six wings & was covered with eyes all around, even under his wings.

Here in verse 8 the chayot are described with 6 wings. This is noteworthy because visually the 6 trigonometric functions (sin, cos, tan, cot, sec, & csc – Fig. 8) also have the appearance of wings and behave much like moving appendages. Furthermore the thetas, θ , commonly used to express angular measure, even seem to resemble "eyes all around."

Verse 4 is even more boggling because after going through the various permutations of how a sentience would progress over an unimaginably long time-line it became clear, as described in Fig. 4, there would be 24 ways to attain complete "God-hood." Amazingly what's described here? Twenty-four thrones before the seat of God.

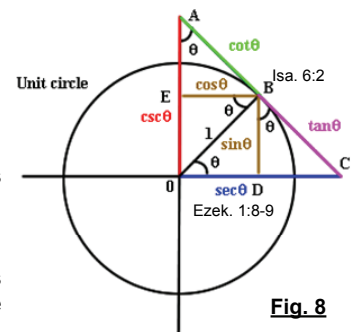


Fig. 8