

Dialectic, Algebra and Panpsychism

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Abstract

A general problem solving mechanism based on identification of dominant opposites and their mutual transformations is proposed. For every system we can find at least 2 pairs of oppositions (physical or emotional perceptions), that can cyclically transform from one to another. If these transformations occur in a certain sequence and periodically, they produce a self-regulating system with “steady-state” solution(s). This principle is suggested to be the source of Consciousness and Life, that both emerge from “anisotropic” vector operations, such as non-commutativity and non-associativity in higher algebras. In the meantime, our “common sense” is rampantly oppressed by the “commutative” thinking, implying that $1 + 1 = 2$ and $A \times B = B \times A$. Most phenomena have inherent directedness, but we consider them as “scalar”. This creates many delusions as to the Nature of Reality, leading to global problems of Humanity and fears of “limited resourcefulness and general indifference”. A “comforting” model of the Living Universe is given, that may reduce these fears and help developing the abovementioned “problem solving” system.

Keywords: Common Sense, Dialectic, Unity of Opposites, Algebra, Panspsychism

The emerging global challenges and artificial intelligence pose serious question regarding the validity of our common sense and philosophy in general. The very fact that humanity faces a wide range of global problems (environmental, poverty, health, *etc.*) indicates that our “common sense” is flawed. Most often we create problems unknowingly, and then try to solve them “dialectically”, using the “art” of reasoning and argument manipulation. In the meantime, the natural process is somewhat different. Two oppositions cannot unite without an external help of another pair of oppositions. Both pairs must maintain the “mutual neutrality”, yet be able to transform to each other through some “protagonistic” process. Such transformations, in a specific sequence, create the “centripetal force”, lifting counterparts to their subtler forms. It is akin to a self-regulating vortex, arising from non-commutative vector operations in higher algebras (of 4 and more dimensions). This vortex is suggested to be the actual source of Life, Morality and Matter, yielding a simple yet “mind-blowing” model of the Universe. These principles can be used for solving any practical and philosophical dilemmas.

Time and Self-Regulation

The sense of time comes from the sequence(s) of feelings, thoughts or events, that are (i) “unidirectional”, as the cause precedes the effect, and (ii) “periodic”, as evolution goes in cycles. These cycles are caused by the opposite forces that represent the simplest self-regulating systems. If we treat them as intellectual beings, they can yield solutions that we seek. The trick is in considering not just one pair of oppositions, but two or four.

For example, consider two primordial elements, Fire and Water. In a usual (,harsh“) form they just extinguish each other. But if they are mediated by another pair –

Earth and Air – then Fire and Water may become Warmth and Moist, that in concert create conditions for the life.

Another example – Desire and Observation. If we are preoccupied by Desire, we cannot Observe objectively. But if we also employ Satisfaction and Thinking, then Desire and Observation may soften to the Faith and Interest.

In both cases we have a reciprocal effect yielding circular rotation, as shown in Figure 1.

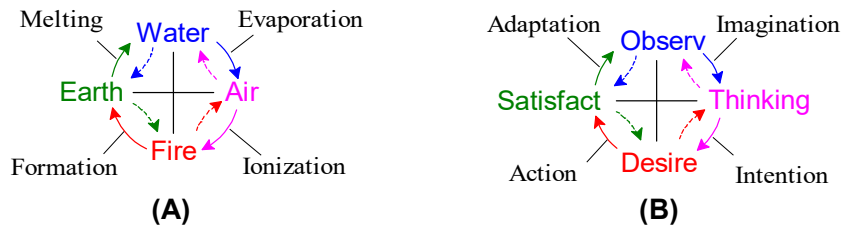


Figure 1. Interactions of two “orthogonal” pairs of oppositions

All elements have dual impact on each other, wherein solid arrows show positive effect, dotted – negative effect. For example, Fire aids Earth through yielding an ash (“Formation”), but is weakened by Earth that “absorbs chaos”. Likewise, Desire aids Satisfaction through Action, but is weakened by Satisfaction that “relieves tension”.

Each element gets a dual “aiding – hindering” impact, as in the “reward and punishment” manipulation, that softens its attitude towards its diagonal counterpart. So two pairs of oppositions – like two couples of lovers – do matchmaking to each other, leading to a new state of being.

Although in reality this effect is much more sophisticated, it reminds of the “wholeness” principle, implying that “the whole is more than the sum of parts”. One pair

triggers another, that in turn triggers the first, as if “fire was igniting itself” (using metaphor of Weinstein, 2020). It may be viewed as the most primitive form of “pre-proto-homeostasis”, inherently present in all natural processes.

For example, in kinetics it reminds of the “steady-state” solutions. In thermodynamic – the long-sought 4th law. In physics (Maxwell’s equations) – the curl operator. In laser optics – interference between a coherent beam and its own reflection, yielding a hologram. In chemistry – non-equilibrium thermodynamics, like Belousov – Zhabotinsky reaction, when two pairs of reagents trigger each other’s oscillations. In biochemistry – Crebs cycle. In material science – Rebinder effect, when cumulative effect of many small forces exceeds the sum of individual impacts. Perhaps the same mechanism is operative in collective decision making too: if each opponent represents a pair of struggling oppositions within himself, then collectively they can lift each other to the “higher consciousness”.

Two Pairs vs. Four Pairs

As mentioned earlier, oppositions unite through cyclic transformations in a specific order. In Figure 1 it is shown by bold arrows representing the “aiding” mechanism. Moving in the opposite direction will cause problems, because “diminishing” is worse than “aiding”, and some stages may be irreversible.

Figure 2 shows preferred transformations of the original elements and their intermediate stages, where primordial elements are replaced by states of the matter

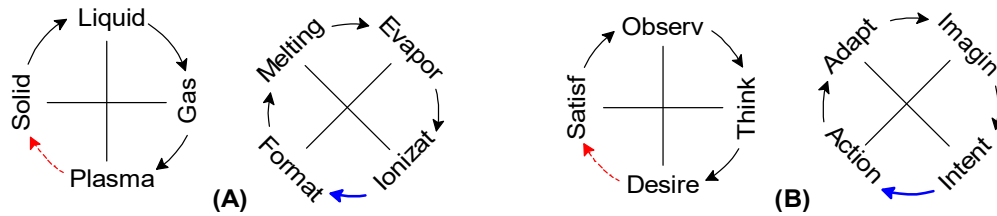


Figure 2. Unidirectional changes driven by increasing entropy and irreversible stages

Black arrows indicate the increasing entropy, dotted red – the decreasing entropy, bold blue – potentially irreversible changes, qualitatively transforming the whole system, so that red arrows may become operative.

Case (A) is rather theoretical, as normally Plasma yields Solid during chemical combustion. Even so, this can only happen because Ionization irreversibly transforms to the Formation of new substances. What was burned, that cannot be restored. Yet, if this was a purely physical process, then Formation would imply crystallization ([google Plasma Crystals, especially experiments in outer space where plasma forms crystal structures!!!](#)).

In case (B) Desire yields Satisfaction, because Intention irreversibly transforms to Action. So we can get Satisfaction from Desire, but we can hardly reverse it. On the other hand, Satisfaction can still be achieved without an action, if during many iterations our thinking will reformulate the goals. So both quartets can work independently, although together they are more efficient.

This can be compared to quaternions and octonions, 4- and 8-dimensional extensions of complex numbers, that are non-commutative: $A \times B \neq B \times A$, which explain various “strange things” like chirality (Capozziello, et al, 2005). Octonions are in

addition non-associative: $A \times (B \times C) \neq (A \times B) \times C$, which explains even more specific things (**examples needed**). The higher level of such specificity (of higher operations' non-symmetry) yields the higher level of (potential) efficiency (**examples needed**).

Each vector can be related to a specific element / opposition. Rotation of one vector around another (cross product) can be compared to dissolution of one opposite in another. However, in 4 dimensions any vector rotates simultaneously around 2 vectors. Moreover, since rotation defines a flat plain of 2 coordinates, so we get rotation of a pair of vectors around another pair, as shown in Figure 3 (A-F).

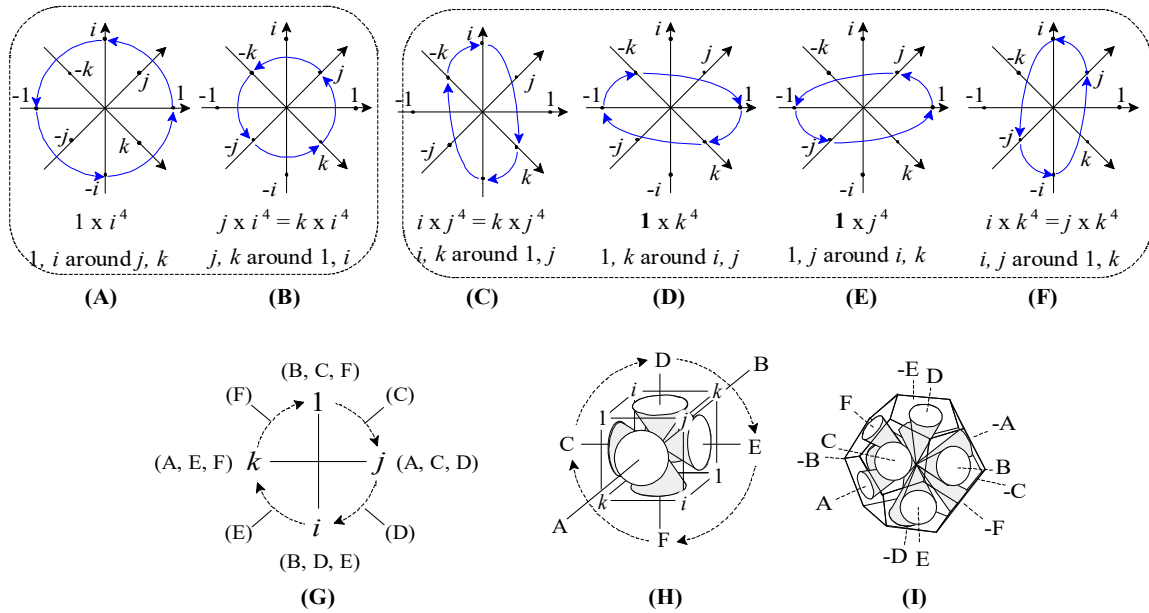


Figure 3. Quaternionic explanation of the self-regulation mechanism

Consider a self-regulating system depicted in scheme G. Two pairs of oppositions ($1 - i$ and $j - k$) correspond to rotations A and B that must represent two permanent vortices. Four steps of circular transformations correspond to the remaining 4 rotations (C – F) that must occur in a sequential order. As a result, each element corresponds to three different rotations: one permanent (“thesis and antithesis”) and two consecutive (“cause

and effect”). Coincidentally, these are the only three rotations around the given element as a central axis.

This means that every element is “supported” by the remaining elements at all stages of transformations. All elements are always active, but their roles are changing (from the leading to supporting). Below we will see that if at least one element stops being active, the entire system becomes “sick” and self-regulation vanishes. (This is why we become destructive when missing at least one of the 4 activities: mental, emotional, physical, and adaptive/reflecting.)

Scheme H shows that all 6 rotations form a “rotating cube”, where each node represents a certain element, each face – a certain rotation, and the entire structure rotates around the “dialectic axis”. The latter may represent the simplest “time-vortex” mechanism that creates the sense of time.

Since it is “unidirectional”, so the time cannot be reversed. But since it rotates around the dialectic axis, so there must be interactions that are “faster than time”, as the time by itself is just a consequence of this axis. This may explain why entangled particles interact through any distance instantaneously, and why the Bell’s theorem works.

The last scheme (I) shows a bi-directional extension of previous model, in which time flows in both directions. This may be viewed as a merger of two opposite worlds, creative and destructive, that yield the effect of pulsation. Each dodecahedron’s face includes 5 elements, 4 of which represent the original oppositions, the 5th being their unification in one of 12 rotating cycles, 6 clockwise (“creative”), 6 counterclockwise (“destructive”).

Furey (2016) provided similar explanations using the bioctonionic model. Our schemes H and I could be compared to the simplified concepts of octonions and bioctonions, although Furey’s model is incomparably more sophisticated.

Evolution vs. Revolution

Figure 4 shows how periodic “unidirectional” transformations may reveal their „inner subtlety“ that normally is hidden.

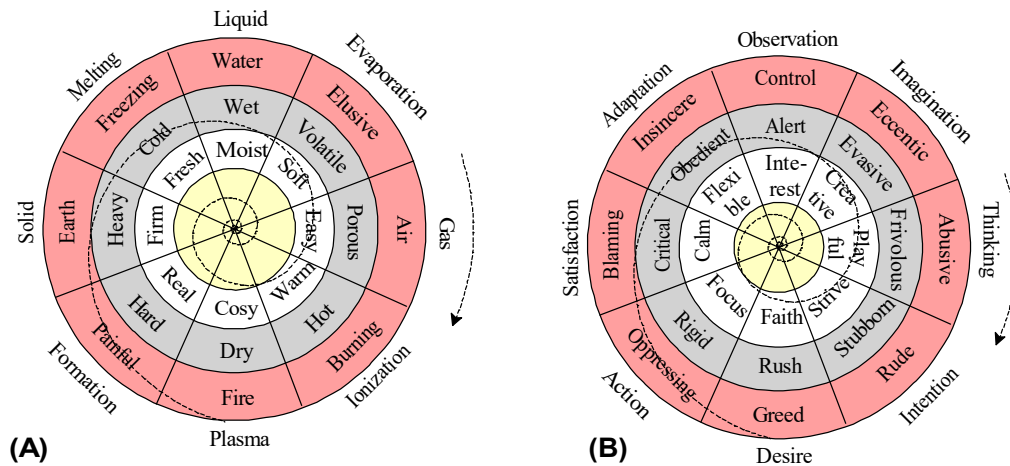


Figure 4. Clockwise movement produces subtle states

In case (A), clockwise rotation along the spiral line transforms Fire to Pain, then Earth, Cold and so on, until we reach the center. In reality it may take many iterations, but in the end Fire will transform to Cosiness, Earth – to Firmness, Water – to Moist, and Air to Easiness. Counterclockwise rotation will repel us back (all red cells), as if we moved against a whirlpool’s current.

Same in case (B). Clockwise rotation gradually transforms Greed to Faith, Satisfaction – to Calm, etc. So if we are preoccupied by Desire, we should move clockwise to the Action, whether physical or „intellectual“ – formulating task(s), formalizing procedures, cleaning space, or (at least) creating positive attitudes. This

requires toughness, focus and discipline. But if we get back to Thinking, then we become pathetic, self-indulgent, stubborn, rude. Eventually Desire transforms to Rashness and Greed, Thinking – to Frivolity and Abuse, Observation – to surveillance and control. Satisfaction – to criticism and opportunism.

Thus moving counterclockwise is similar to going against the current and causing „waves“. We do this because either we are driven by a flawed idea (thus plotting against the system) or the system is corrupt (thus causing problems to us). There is also the third possibility, that both our ideas and the entire system are flawed.

As in any rotating system, there are two forces – centripetal and centrifugal – that act simultaneously on us. Since the system is self-regulating, it establishes the „stable orbit“ in which we move around the center, like a planet around the Sun. It should be describable by the Kepler's laws and Newtonian mechanics, yielding „steady-state“ solutions with the unique time perceptions. The closer we get to the center (coinciding with our goal), the faster the time moves (by the reverse square law), but the less important it becomes.

Multiplicity of Sequences as Value Systems

The oppositions can take different sequences depending on the system. These other systems are less abundant, as shown in Figure 5.

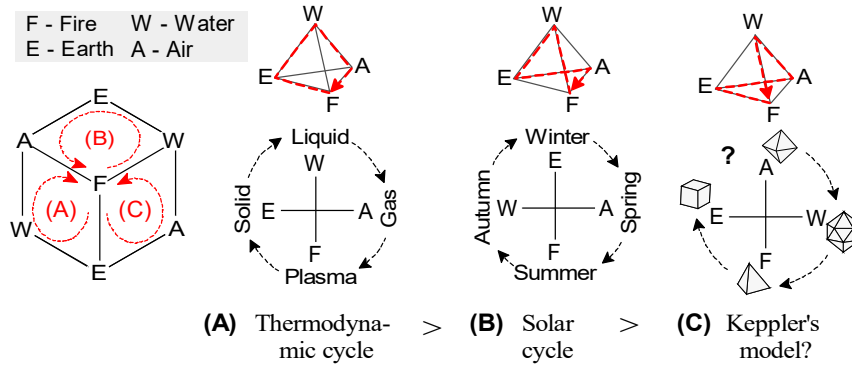


Figure 5. Three sequences of the four elements

Case (A) seems to be the most abundant, as Fire opposes Water to a much greater extend than other elements. Case (C) seems the least preferable, as here Fire confronts Air, its usual ally, as if Desire was opposing Thinking.

Case (B) corresponds to emotions changing along solar cycles, circadian and circannual. Simply speaking, during the night and winter we are less active than during the day and summer, whereas during the evening and autumn we are more relaxed than during the morning and spring. Figure 6 shows two possible models of such changes.

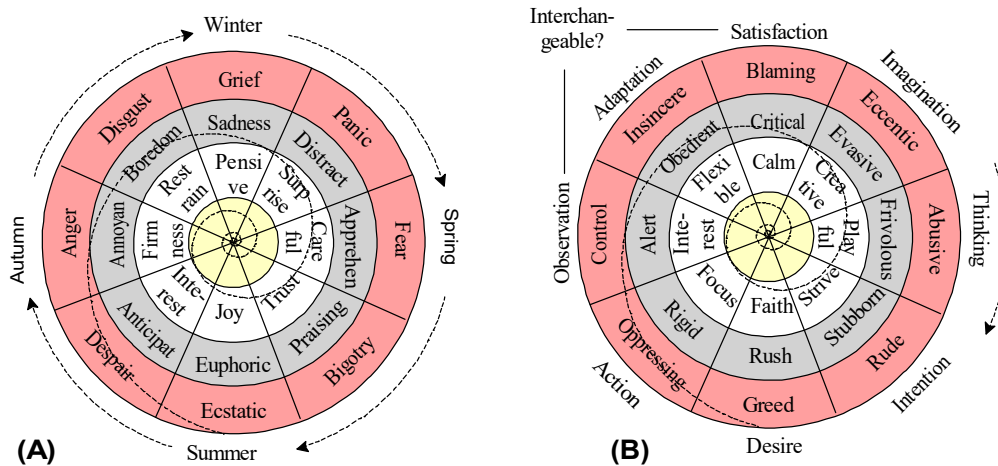


Figure 6. Examples of the Solar cycle models

The first represents the simplified version of the [“adapted” Plutchik’s model](#) (Petrauskas, 2021). The second copies Figure 4(B) with changed positions of three segments. All of

these models look “legitimate”, indicating that our psyche follows several alternative “behavioral directions”. A much more [detailed model](#) (involving 24 radial segments and 10 concentric layers) was developed by Petrauskas (2018), and new models can be developed from other circumplex models ([Plutchik’s book](#))

Returning back to Figure 5, case (C) may be operative on the micro- and macro-scales. *E.g.*, Fire and Air could be compared to ionized atoms and neutral molecules, Water and Earth – to hydrophilic and hydrophobic species. Then “softer” forms would imply large natural compounds with delocalized charge and amphiphilicity, like *e.g.* vitamins, hemoglobin, proteins and DNA.

Kepler’s Platonic solid model of the Solar system also fits this sequence, although involving five solids (instead of four), and being hardly periodic. On the other hand, it may represent projections of higher algebraic cells that act upon each other, creating “softer structures” (that will be considered below).









Each case in Figure 5 resembles a certain “value system” that works in a given realm. We humans sometimes tend to confuse them (especially cases A and B), while still preserving some directedness. This is why various “probabilistic” language models (like BERT, GPT-3, T5) are so successful. Yet their success is limited to the extent of value system preservation and “general self-regulation” that language corpuses provide. The first is defined by the circular sequence of ideas, the second – by their radial distance to the inherent goal.

Algebra and Panpsychism

Above we touched on parallel between the numbers of oppositions (quartets and octets) and algebraic vectors. This gives an insight on how the Universe may work, and how to understand (and liberate?) our “Inner-Selves”. Table 2 extends this parallel, with N representing the number of mathematical dimensions, as well as dialectic oppositions (emotions or perceptions) that form a single system. Algebraic cells indicate types of intellects that (for the sake of clarity) are grouped into three categories

Group A includes commutative algebras that do not yield self-regulation, thus can be assigned to “quasi-intelleccts”. These types of thinking consider that the “world is dead”, *i.e.* not self-regulating. It is useful when all decisions have been made (by higher intellects) and we just need to implement the plan (red arrow in Figure 2(B)). But it may cause harm in other cases. Yet in our lives it is a prevailing (materialistic) paradigm, covering most of “common sense”, thus creating most of global problems.

Table 2. Algebra and Dialectics

	Algebra					Dialectics	
	N	Numbers	Cell	K_N^*		Intellect type	Symbol
A	1	Real	A_1		2	Linear and formal logic	$1 + 1 = 2$ $y = f(x)$
	2	Complex	A_2		6	Dialectic manipulation	
	3	---	H_3		12	Spatial thinking, Physical reality	
B	4	Quaternion	D_4	24-cell	24	“Pure intent” – 4 opposites	
	8	Octonion	E_8		240	“New Life”? – 8 opposites	
C	24	<i>Tri-octonions?</i>	Λ_{24}		196,560	<i>Pure Love?</i> <i>24 opposites</i>	
	240?	<i>Octonion-Octonions?</i>	“ X_{240} ”		$\sim (24!)^2$	<i>Universal Intellect?</i>	

*Kissing number – the greatest number of non-overlapping unit spheres that touch a common unit sphere.

$N = 1$ means that any single opposition represents a single-dimensional line of real numbers. It yields the “linear” logic assuming that opposites “fight until one winner” or do not interact at all: $1 + 1 = 1$ or 2 , respectively

$N = 2$ indicates two oppositions representing complex number plane. The operating idea is that $1 + 1 = 2$ or 3 , as sum (or product) of two vectors yields the 3rd vector. Since complex number operations are commutative, such systems are not “self-organizing”, and so the “newborn baby is dead”. It corresponds to various dialectic

manipulations, such as Socrate's Debates and Aristotle's Rhetorics, often based on "weighting" arguments. It is also a part of "common sense", employed by judges, politicians and scientists. It makes the life "superficially convenient", while not touching on the essence of why we live. So, unwillingly, it makes people lonely and sad ([citation needed](#)).

$N = 3$ corresponds to "spatial thinking" widely employed by modern physics, through partial differential equations. Yet it does not allow for unequivocal interaction of oppositions, as the product of 3-D vectors does not yield another 3-D vector. This was shown by Sir William Rowan Hamilton (nearly two centuries ago!), who introduced the 4th coordinate. Modern physics assigns this coordinate to the time in "space-time continuum", although it is only needed for unambiguous 3D rotation. Thus all 4 coordinates are spatial, and philosophy of modern physics is in jeopardy.

Group B includes non-commutative algebras that yield self-regulating systems. Only two such cases are considered, as according to the [Adolf Hurwitz theorem](#) ([composition algebras](#)), multiplication of two vectors (sums of squares) yields another vector only under $N = 1, 2, 4$ and 8 . Accordingly, only then rotation of one vector around another gives unambiguous result. All such cases have dashed background in Table 2.

As we have seen above, these cases can be traced in many natural processes. Their wisdom is reflected in the symbolism of many spiritual traditions (Groff et al, 1996). It can also be associated to the higher consciousness available to humans, including perhaps all prophets

$N = 4$ represents quaternions that describe various unique properties of particles ([google quaternions and particle physics](#)), 3-D chirality, and self-organization (as described above), [plus google quaternions and homeostasis](#))

Beyond non-commutativity, quaternions also yield the 6th Platonic solid – 24-cell, vertices of which are precisely the 24 Hurwitz quaternions ([Wikipedia, 24-cell](#)). It is also unique in that it has no analogues in other dimensions, yet is operative in generating two most exquisite cells in higher dimensions (E_8 and Λ_{24}).

From dialectical perspective $N = 4$ associates with the natural “flawlessness and benevolence” – ability to sense the independent struggle – thus association with “Pure Intent”. It enables the opposites to “dissolve each other”, thus association with Yin and Yang.

$N = 8$ represents octonions that are heavily used in various “theories of everything” in particle physics (Lisi and Weatherall, 2010), although most often they are a part of a more complex systems, such as biooctonions and beyond (Furey, 2016, Weinstein, 2020, Wolfram, 2020, Caballero, 2020). Octonions yield E_8 cell through Cayley integers (Baez, 2013). This cell is so beautiful (see [animation](#)) that it calls for a truly romantic interpretation.

If two parents with $N = 4$ perceive each other’s oppositions as their own, they can form E_8 lattice (as a product of two sets of quaternions). This gives birth to a whole new Universe, since $K_8 = 240$ corresponds (or is close) to the number of dimensions that compose the Universe! We will give plenty of evidence to this statement below

Every part of the Hologram must possess all of its building blocks. So E_8 must precede every “full-featured” birth, including even cell division – so we can associate it with a New Life and/or Mitosis.

(While most “common” creatures reach E_8 only from time to time, there may be other creatures that live in it permanently. Consider for example Gaia, our planet Earth, that transforms the seeds to plants and forests, while reversing “all physical laws” through biotic pump system (Makarieva and Gorshkov, 2010). Another possible example – Cosmic Microwave Background Radiation, that emits energy from “scattered space”, as if constantly giving birth to entire Universe. Any messages from E_8 level cannot be expressed in a “linear” language, so we perceive them as either unspeakable bliss or outbreaks of disasters)

Group C includes “Creating Algebras” that “nourish” all other systems. Furey, 2016, Weinstein, 2020, Worlfram, 2020, suggested that algebra acts on itself to create our Universe. Building on this, we simply add that this “action” must be much more elegant than we can possibly imagine. So we make use of various “coincidences” that others hesitate to use, to arrive at a breath-taking proposition

$N = 24$ yields the Leech lattice, Λ_{24} (see [animation](#)), which is similar to E_8 in that they both share the “universal optimality” (Cohn et al, 2019). It is also similar to all other cells from the dashed areas (related to Hurwitz algebras) as they all leave no free space for the unit spheres to move. Yet it is much more grandiose, creating mind-blowing “supra-thermodynamic” and “nesting of dimensions” possibilities.

For us humans it means making the stringent disciple (and formal logic!) to serve the highest poetry – creation of New Life (E_8). The latter has little to do with AI or “artificial life” – on the contrary, it means receiving Life as a Sacred, Mystical Event. To get the ticket to the “God’s game”, we need to reach $N = 4$, which comes through Awe and Admiration, rather than Formal Logic and Regulation! (The latter two are also needed, but only on a “personal rather than social” scale)

The red arrow indicates that either our Universe is a part of a bigger “Multiverse” (for entropy removal), or conventional thermodynamic is void for such a system.

Eric Weinstein (2020) proposed that the Universe could have $N = 248$ based on octonion-octonionic algebra. Linear extrapolation of the known $\log K_N$ to $(24!)^2$ (an estimated number of the “replicating creatures”) yields $N = 256 = 2^{(2^3)}$ – a triple exponent(!). Both of these estimates may still support the “supra-wheel” idea in Figure 7(A), given their closeness to 240.

Combinatorial Coincidences

Figure 7 (B) shows more possibilities. $4! = 24$ could imply that each of 24 dimensions is a unique permutation of quaternions. Each permutation is a new sequence with 4 possible “stopovers” (e.g., 4 assignments of the real axis), thus yielding 96 “valid wheels”, which explains the number of material particles (below), and coincides with the numbers of faces and edges in a 24-cell.

Adding here the “trimmed” sequences (4 quatenionic + 3 spatial + 2 complex + 1 real) yields $(1 + 2 + 3 + 4) \times 24 = 240$ – “all possible wheels”, coinciding with K_8 and hopefully dimensions of the entire Universe.

$24! \sim 6 \times 10^{23} = N_A$ – Avogadro’s number, representing the number of molecules in a mole of substance, also approximate numbers of: protein molecules in a human body, cells in all humans cumulatively, moles of substance in an average planet, stars in a visible Universe. Thus, every star (as well as every molecule, cell, or mole) can be viewed as a unique combination of 24 opposites, hence 24 dimensions.

The number of “living creatures” (capable to replicate *via* mitosis) is $\sim(24!)^2$, whereas the number of all possible creatures is almost exactly $(24!)^6$ (see below). For all of these reasons Λ_{24} associates with “Pure Love”, whereas $N = 240$ – with Entire Universe.

These considerations are also supported by the ${}^{240}C_{240}$ and ${}^{240}C_{96}$ values – combinatorial distributions of 240 identical objects into 240 and 96 distinct bins, quite accurately explaining the size of the visible Universe and the number of particles in it (Figure 8).

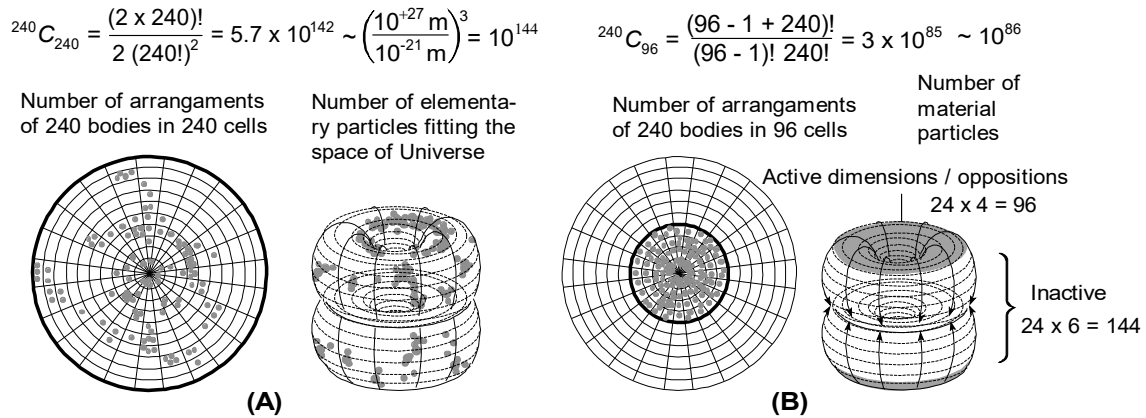


Figure 8. Distribution of 240 identical objects to 240 and 96 distinct cells

The first number (${}^{240}C_{240} = 5.681 \times 10^{142}$) is close to the number of elementary particles fitting the visible Universe (with diameters 10^{-21} and 10^{27} meters, respectively).

This suggests that the entire Universe is filled with “aetheric” particles, each representing a unique combination of 240 “shallow oppositions”. ${}^{240}C_{240}$ is unbelievably close to $(24!)^6 = 5.705 \times 10^{142}$, with log-error just 0.001%, suggesting that all particles constitute 6 layers of “collective consciousness” (recall, that $24!$ is the approximate number of molecules, proteins, cells, moles, stars in various meaningful entities).

The second number (${}^{240}C_{96} = 3 \times 10^{85}$) is close to the number of material particles (fermions) in the Universe. It is obtained by arranging 240 objects into 96 distinct bins, representing unique quaternionic sequences (as explained above).

Thus 240 dimensions can also be viewed as both “energy bits” and “consciousness mechanisms”. If all bits come to “healthy” mechanisms ($N = 4$), then we obtain a “real” particle with non-zero mass. But if at least one bit is wasted on a “sick” mechanism ($N < 4$), then particle is “aetheric”, having no mass. It can “vibrate”, thus transferring the waves, but it cannot rotate, thus no mass.

How May it Work?

It looks like non-commutativity is the simplest type of the “intellectual resistance”, overcoming which creates a mass. If you can imagine a continuous rotation of 4-D quaternions with sufficient speed, then (quite possibly!) you can create new mass.

The algebraic non-commutativity may also be the source of emotional non-indifference and conscience - the internal sense of right and wrong. So mass becomes inseparable from emotions and intellect! Above we saw that material particles activate only “healthy” mechanisms, thus offering predictability and confirming their conscientiousness. Aetheric particles have no such feature, as they activate some “sick” mechanisms, like “trickery in lucid dreams”, and so they don’t have mass either.

The 3-level nesting scheme in Figure 7 (B) may indicate a 3-level psyche in healthy organisms: $N = 4$ and 8 representing consciousness (normal and mitotic), $N = 24$ and 240 – subconsciousness (Love and Creation), $N = (24!)^1$ to $(24!)^6$ – unconsciousness, reflecting all kinds of “collective consciousness”. The latter may have many smaller levels, due to various “smaller coincidences” (with log-errors $< 0.13\%$):

$${}^{240}C_{240} \sim K_{240}^3 \sim (24!)^6 \sim K_{24}^{27} \sim K_8^{60} \sim 96^{72} \sim \dots \sim 4^{240}$$

(Note the “magic” repetition of numbers divisible by 2, 3, 4, 5. The multitude of such relations may indicate the complexity of networks that guide our thoughts and feelings.)

The multi-level nesting creates multiple possibilities for various “quasi-real” structures, that look “healthy” on the surface, but “sick” from inside. This may pose a serious threat to our health and morale, through presenting all Healthy Creatures as “inherently sinful beings that have to be controlled”. So we get to the world of “crooked mirrors” as described in the novels of George Orwell.

(Consider for example the [Behavioral Sink](#) theory suggesting that all global problems arise from the plain “overcrowding” rather than disrupting deeper consciousness. So it calls for reduction of population rather than lifting intellect and restoring natural lifestyle(s). For achieving the Pure Intent ($N = 4$) level, we have to activate two pairs of oppositions, but modern way of living makes it hardly possible.)

Conclusions and Suggestions

The world is a much more elegant and magical place then we can presently imagine. Yet it is full of traps created by “quasi-real” constructs. The largest danger

comes from our “commutative” thinking ($N < 4$), that philosophically opposes the very idea of a Healthy Life. This can be tackled on several levels.

First, investigate the ideas of “dialectic algebra” and Panpsychism more deeply. Second, investigate practical benefits of natural life styles and environmentalism from psychological and socio-economical perspectives. Third, investigate the ways of using the emerging technologies for the benefit of Healthy Life. For example, enhance the existing “[Artificial Wisdom](#)” system(s) and develop the [Global Wisdom Network](#) for enhancing our intellect in the most needed situations.

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