

## **Geometric neutrality: reality's prime motive**

Investigating the mystery of consciousness in a rational way requires logical rigor unconstrained by any limiting assumptions. Nevertheless, this often begins with some ontological bias of what we expect to find which influences how thoroughly we look. In truth, searching for the source of consciousness is itself a limited strategy as it may be emergent from something even more fundamental. To fully understand how consciousness fits into the landscape of reality, we need to get to the existential bottom of things and work up from there. This means extending our search to the root cause of existence itself.

The notion of an ultimate first cause is captured well by Aristotle's philosophical idea of the *prime mover*, of a first cause or uncaused cause of all motion in the universe. The prime mover can be thought of as the fundamental catalyst of reality which causes change but is never changed itself. In this essay, I propose that neutrality is the prime motive of reality and manifests through the relational language of geometry as the self-referential dynamic of subjective experience. This offers compelling mathematical support for idealism.

### **Nothing but neutrality**

To begin our inquiry into what consciousness is and why it's something that exists at all, we should establish an existential frame of reference by defining what "nothing" versus "something" means. This requires us to dispense with any notions of space, time or matter as being fundamental as these too are assumptions of pre-existence; of some where, when and what already in place. However, as we know physical reality exists, at least in our perception, logical consistency would suggest that what we consider as nothing and something are just different descriptions of the same neutral quality of possibility; one as the neutrality of state and the other as neutrality of form.

It is therefore upon the foundation of *neutrality* that reality would seem most logically built. This introduces the concept of 0 as reality's first mathematical property, not as a number representing no quantity but as the quality of neutrality which is always conserved.

### **Geometric least action**

If neutrality is the prime motive of existence, how would neutrality express itself most simply? To put it another way, what would reality's least action be? As the simplest physical expression is a zero-dimensional point, this would be its first possible form thereby establishing geometry as the fundamental language of reality and the singular quality of 1.

However, for point geometry as an inherently specific and non-neutral form to retain overall neutrality, it would need to manifest as a polarized pair of equal and opposite points relative to a neutral origin. This would define the polarized quality of 2, the concepts of positive and negative and thus the mathematical operations of addition and subtraction. It would also introduce the geometric principle of symmetry and the linear geometry of one-dimensional space, most simply represented as the real number line from +1 to -1 but with a broader qualitative meaning as that of *neutrality through polarity*. This in turn establishes the catalytic quality of 3, of positive and negative emerging from neutrality. As polarity imparts a positive and negative bidirectionality relative to a fixed origin, the notion of forward and backward sequence or time likewise emerges, of future and past relative to a neutral present.

The next logical step in our neutral geometric progression from the one-dimensional real number line spanning +1 to -1 would be all possible orientations of that line relative to the origin. This defines the geometry of the circle in two-dimensional space, specifically a unit circle of radius 1 centered about the origin. This introduces a second dimension perpendicular to the real number line which thus represents potentials not yet manifest into linear reality, somewhat dismissively referred to in mathematics as “imaginary” numbers and, together with the reals, as complex numbers. This characterizes complex numbers as the circular geometry of imaginary potentials only becoming real where circle intersects line, necessarily doing so through the defining identity  $i^2 = -1$  of imaginary numbers whereby rotation counterclockwise or clockwise is equivalent to multiplication or division by powers of  $i$ .

Thus, the geometric principle of *rotational neutrality* emerges along with the operations of multiplication and division. As each multiple of  $i$  corresponds to a quarter rotation around the unit circle, the idea of cycle and the base-4 cycle in particular join our mathematical lexicon.

### **It's all about the base**

Despite the geometric simplicity of the base-4 cycle with only two ways of partitioning itself, in half or in quarters, it offers little creative freedom. With just four points of possibility in the context of the complex unit circle, 1, -1,  $i$  and  $-i$ , only two of which can be physically real, base-4 would only allow the binary property of polarity to be expressed. But what higher base structure would be the most logical choice in terms of versatility and size to account for the much greater complexity found in nature?

First, that base must be divisible by 4 to conform to the base-4 cycle upon which our model of reality is thus far built. As such, base-8 and base-12 would be the next viable options, base-8 being factorable three ways: in half, quarters and eighths, and base-12 five ways: in half, thirds, quarters, sixths and twelfths. The next alternative would be base-24 with six factors but at the cost of much greater size and complexity. Base-12 would therefore seem to be the most logical and efficient structure.

Nature provides plenty of evidence of its base-12 preference. The carbon atom critical to life is structured in base-12 with six protons and six electrons, as is photosynthesis which converts six molecules each of carbon dioxide and water into six of oxygen for the air we breathe. The twelve-tone chromatic scale of music achieves the maximum number of intervals, or pitch combinations, within the smallest number of notes. Likewise, there are twelve elementary particles of subatomic matter which occur as two groups of six by type, four groups of three by charge and three generations of four by mass.

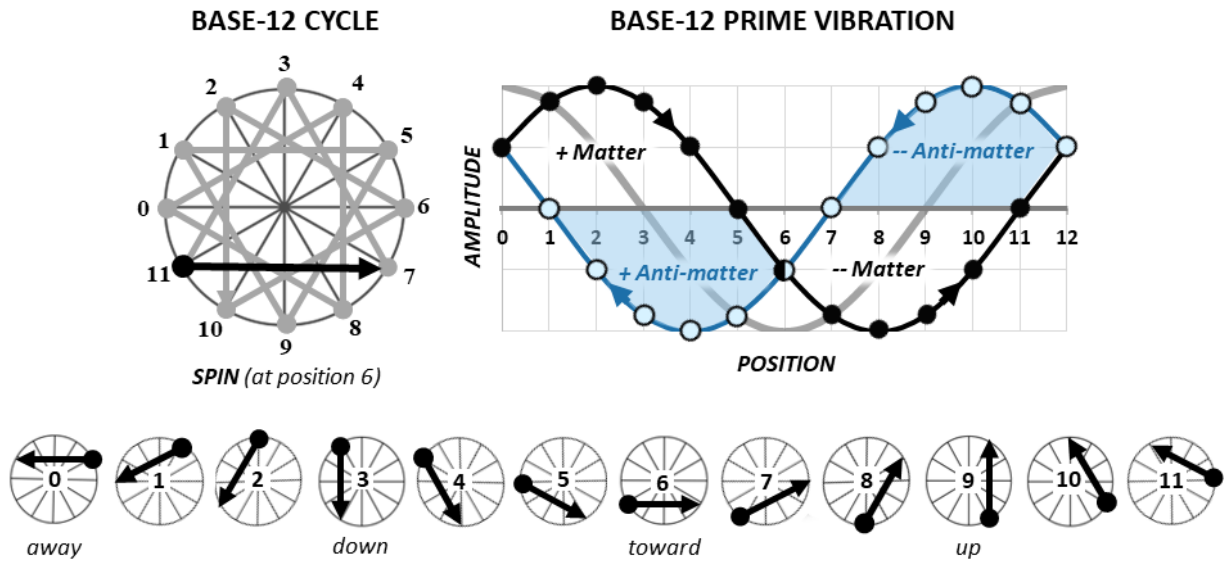
Note that base-10, the standard used for science, is actually a poor choice as it is neither a multiple of base-4 foundational to complex numbers nor particularly versatile for its size with only three ways of dividing itself: in half, fifths or tenths.

### **Nature in its prime**

As all integers can be generated by successive cycles of the base-12 positions from 0 to 11, or any base cycle for that matter, mathematics can be viewed as a cyclical construct. However, as every integer is either a prime number only divisible by 1 or itself or the product of primes, all that's needed to generate the integers are those positions on the base-12 cycle at which primes can occur in any given cycle: at 1, 5, 7 and 11. Thus, the notions of integer and prime become synonymous with imaginary and real. Note that positions 2 and 3 are excluded as they are prime numbers in the first cycle only, essentially the structural factors of the base-12 cycle itself. Position 1, however, is included being non-prime in the first cycle only. So, in a base-12 cyclical context, 1 should actually be considered a prime number. Thus, the base-12 prime cycle of positions 1, 5, 7 and 11 seems to represent mathematics at its simplest. Or does it?

The four prime positions of 1, 5, 7 and 11 also possess a 2:1 rectangular symmetry within the base-12 cycle, something base-10 lacks with its prime positions staggered at 1, 3, 7 and 9. Also, positions 1 and 7 being opposite each other on the base-12 cycle, as are 5 and 11, subtract when treated as vectors. This reduces to two equal net vectors of length 6 at positions 7 and 11 rather than four vectors of differing lengths at 1, 5, 7 and 11. This reveals an even simpler cyclical embodiment of mathematics, that of a base-12 cycle of radius 6 generated by prime positions 7 and 11 alone. Still, as any cycle is inherently biased in one rotational direction, the base-12 prime cycle would necessarily manifest along with its rotational opposite so as to maintain dynamic neutrality overall.

This brings us to what logic suggests is the final stage in reality's geometric emergence in the simplest neutral way, that of our simplified base-12 prime cycle expressed over forward and backward time. As this involves the circular rotation of two prime positions 120 degrees apart or 1/3 of the cycle, it produces two sine waves out of phase with each other but spiraling together over time. This generates an elegant double-helix standing wave in 3D that looks remarkably like DNA, the 2D profile of which resembles an upturned figure-8 with its center dipping downward.



Wherever this figure-8 projection intersects the neutral real axis, at positions 1, 5, 7 and 11, are where “real” prime particles can occur relative to an observer’s 2D perspective. All other non-prime positions within the waveform remain as “imaginary” potentials unless forced onto the real axis by an extreme energy event such as with a particle collider.

Although the base-12 cycle simplifies to two prime vectors, all four are restored as intersections with the real axis when expressed vibrationally in a bidirectional way: vectors 1 and 7 along the forward wave and vectors 5 and 11 on the backward wave. This agrees with the opposite temporal nature of matter and anti-matter and why the up and down quarks and their anti-matter counterparts are the prime particles of which all composite matter and anti-matter are made. Being generated by a lopsided cycle partitioned in a 1/3 to 2/3 ratio would also explain why the quarks have fractional charges of +2/3 and -1/3 and why they combine in that same 2:1 ratio to form protons and neutrons. The outermost positions 0 and 12 as point geometries above the real axis would also manifest but as isolated charged particles which remain at the perimeter, namely the electron and positron.

The figure-8 flow of the prime vibration also creates a lateral symmetry of two polarized half-cycles which suggests everything including the universe manifests as a mirrored pair, each subject to an opposite arrow of time and probability polarity. Nevertheless, conservation of neutrality through polarity implies time itself is an illusion with the past and future merely polarized perspectives relative to the timeless now of position 6.

### Qualia appearing as quanta

The prime vibration as physically perceived is the front view perspective of an observer. From this vantage, its twelve positions appear as varying probability amplitudes, polarity ratios relative to the neutral real axis and spin direction up or down – the very same three properties upon

which particle physics is based. However, this is just the projected profile of the base-12 cycle as it rotates into and out of the page, so to speak. Hidden from view is that perpendicular spin component of depth. So what appears as binary spin, up or down, may actually be full rotational spin: up, down, forward and back through twelve rotational increments. This suggests rotational qualia are fundamental and only appear as linear quanta to an observer.

The direct connection between the prime vibration and consciousness becomes apparent when we *characterize* the geometry expressed by each of the twelve vibrational positions in terms of its probability amplitude, polarity ratio and rotational spin. We suddenly realize we are describing subjective qualia:

0. The cycle begins at position 0 with a point probability above the real axis and spin direction fully away, that of an unmanifest and distant *potential* or idea.
1. Next at position 1 is a geometry of positive probability only and the first point of contact with the real axis. This is the singular assertive geometry of *independence* and starting something new. Its spin now slightly downward, position 1 begins to gain momentum and feel tangible.
2. At position 2 is a polarized geometry in a +2:-1 ratio, that of *duality* but with a greater bias towards cooperation than competition. Its spin more downward now, position 2 feels even more engaged.
3. Position 3 has a balanced and neutral +1:-1 geometry, that of the influential but neutral *catalyst*. This calls for an objective mix of creative expression and going with the flow. Its spin fully downward and range of potential at its greatest anywhere in the cycle, it is here that the weight of reality is most keenly felt and most powerfully manifest.
4. At position 4 is a more grounded +1:-2 geometry, that of *structure* but with a greater bias towards flexibility than control. Its spin beginning to move forward imparts a sense of security as we allow more unpredictability.
5. The geometry of position 5 is that of negative polarity only and a stepping off point from the real axis into the unknown below, of fully embracing *change*. The spin even more forward, we feel the momentum of personal change upon us.
6. This brings us to position 6 at the very heart of the base-12 prime vibration. As the merging of opposite polarities into a timeless point of connection, it represents the geometry of *love*. The spin now directly towards us, position 6 resonates with a profound sense of inner truth. The singularity of position 6 falling below the real axis, within a literal black hole of imperceptibility, suggests why love is felt so deeply within and just as elusive to find.
7. Position 7 is that of positive polarity only and a reengagement with the real axis from the 6 of love below. Its forward spin turning upward, we feel inspired to express the *truth* of who we are.

8. Position 8 has a -1:+2 geometry, of applying our truth in constructive ways but with an emphasis towards active *manifestation* than passive subsistence. Its even more upward spin bolsters our sense of capability and self-worth.
9. Position 9 has the same balanced and neutral -1:+1 geometry and broad probability range as position 3, but with a fully upward rather than downward spin. This embodies the positive initiative of *completion*, to finish what was started at position 8 but with equal gratitude for achieving what we can and endings beyond our control.
10. Position 10 has a -2:+1 geometry with an upward spin starting to retreat away, of the *awareness* of what was accomplished but with an emphasis on perceiving what is than speculating what could have been. It's retreating spin steers our focus away from self.
11. Last, position 11 is that of negative probability only and the last point of contact with the real axis, of *illumination* of what was learned from the contemplative clarity of position 10. Its positive spin retreating mostly away reveals the greater truth beyond ourselves as we complete the experiential cycle at position 12 with more wisdom.

There's a further property these qualia possess as a consequence of the prime vibration's figure-8 flow. As each position is defined by the relationship between the upper and lower prime waves, which follow opposite arrows of time, their movement cancels out into a timeless state whenever that vibrational theme is fully expressed. Timeless connection being the inherent quality of position 6 of *love* may be why this is precisely what we feel when doing what we love. And why time seems to drag on when doing things half-heartedly.

After many possible cycles of this figure-8 through the same self-reference of position 6, a 3D toroidal dynamic begins to take shape in which the perceptual gap over position 6 becomes a circular black hole or, in the extra-dimensional physicality we perceive as 4D spacetime, a spherical event horizon within which is impossible to discern such as the core of atoms, galaxies and perhaps multiverse. This toroidal dynamic I suggest is the *mind of reality*, each nested fractal of which acquiring ever-increasing self-awareness through the collective experiences of its fractals within.

Perhaps this is why nature seems to manifest in consistent fractal multiples of itself, as if a certain threshold of informational networking and complexity is required. There are roughly 100 billion atoms in the DNA molecule, neurons in the human brain, stars in a mature galaxy and galaxies in the observable universe. As this number of  $10^{11}$  equates to a cycle of base-12 cycles, it hints at the musical nature of reality repeating over many octaves of scale or, to use a more colorful metaphor, cycles of the color wheel of visible light. As both these chromatic cycles reset upon completion to the neutral start of the next, either as a new octave or as white light, they beautifully illustrate how everything and nothing are vibrationally equivalent.

This might also shed some light on the "hard problem of consciousness" of why we even have subjective experiences. If everything is a vibrational expression of the same octave of twelve

archetypal themes then everything presumably resonates with those themes including our sensory perceptions. This would explain why the color green, for instance, evokes a feeling *like* oneness with nature, rebirth and life; it resonates with the geometry of position 6 as the connection, union and procreation we associate with *love*. And like *love*, green holds the central position in its vibrational spectrum.

### **Emergence of purpose and meaning**

Existence itself has no inherent purpose. It just is. However, geometric neutrality as a prime vibrational thoughtform embodies layers of meaning in its very structure: from its prime motive of neutrality, to maintaining that neutrality through polarity, expressing that polarity through base-12 experiential cycles of vibrational qualia, and relating those thematic experiences through the unifying theme of love.

Subjective personal experience is our most direct and, paradoxically, only objective means of perceiving reality. Geometric neutrality resolves this paradox since the subject *is* the object. Consciousness essentially observes itself through infinitely many dissociated viewpoints. This suggests the prime purpose of existence is to *know thyself*, though never to be fully realized as there is always more than meets the *I* and ultimately nothing to see.

### **Bibliography**

1. Bodnar, Istvan, "Aristotle's Natural Philosophy", *The Stanford Encyclopedia of Philosophy* (Summer 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL <https://plato.stanford.edu/archives/sum2023/entries/aristotle-natphil>
2. Chalmers, David (1995). "Facing up to the problem of consciousness". *Journal of Consciousness Studies*. 2 (3): 200–219.
3. DNA Definition, Discovery and Structure. *Live Science*. December 2017. URL <https://www.livescience.com/37247-dna.html>
4. Kastrup, Bernardo. (2018). "The Universe in Consciousness". *Journal of Consciousness Studies*, Vol. 25, No. 5-6, pp. 125-155.
5. Smith, Michael. *The Prime Vibration*. Victoria, BC: Tellwell. 2021.
6. Turok, Neil. *The Universe Within*. Toronto, ON: House of Anansi Press, 2012.