

LIBER INDIGO: THE AFFORDANCES OF MAGIC



LIBER INDIGO

The Affordances of Magic

JUSTIN C KIRKWOOD

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justinckirkwood.net

ISBN: 978-1-304-17214-3

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INTERFACE



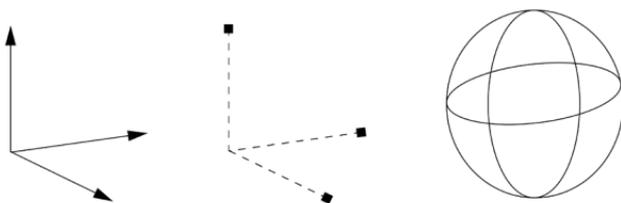
Rotating the Cube

I'm in one of those lifeless open-concept offices, with fluorescent lights abuzz over a sea of beige half-cubicles stacked with binders, paper trays, and clunky CRT monitors. I float alone down the aisle as if carried by a people-mover, sweeping past staplers, fax machines, landline phones, and typewriters. The CRT monitors plug into modern, compact desktop computers that run an operating system called *Windows Color*, with a vibrant and saturated interface doing its best to broadcast colors through the thick, worn glass of the bulky, anachronistic box that confines it. Absent are the standard icons, folders, and menus. In their place is a mysterious array of colorful gradient fields and arcane symbols. And because this is a dream, I somehow understand that this operating system runs on a color-based semantic framework that I recognize as evolutionarily superior, even if I don't yet understand its mechanics.

I wake up intrigued by this vision of a parallel universe where Microsoft shifted the computing paradigm, overturning the "desktop" metaphors that have shaped our digital lives for half a century. WIMP (windows, icons, menus, and pointers) is the interface framework we all take for granted as the *de*

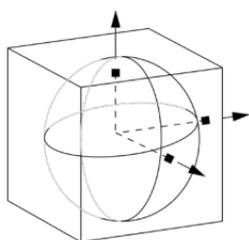
facto method of interacting with computers. Xerox invented the windows schema in the late 1970s, and the skeuomorphic icons for folders, office tools, and documents became cemented into our collective psyche when Steve Jobs ported the system to the Macintosh in the early 1980s. While Jobs' marketing genius can take much credit for the success of the desktop, its metaphors offer an undoubtedly compelling set of conceptual handles that allow laypeople to navigate the complexity of computing without internalizing the arcana of computer science. In this book, we'll call these conceptual handles *affordances* - a term coined by the psychologist J.J. Gibson to describe what the environment affords or provides the animal as an interaction modality. A log affords a bear the ability to sit. A branch affords a sloth the ability to hang. The word acquired additional meaning in the world of human-machine interaction after being appropriated by design professor Don Norman to describe elements of technology that directly interface with people. For example, the handle is the affordance of the door. It's the icon we double-click to open the program we call *Outside*.

When designers work with 3D graphics, they need to be able to interact with all facets of a shape. The convention of 3D design programs is for "gizmos" to materialize when a virtual object like a cube is selected, enabling the user to interact with the object's various geometric properties. The standard gizmos are *move*, *scale*, and *rotate*.



Move, scale, and rotate gizmos

These affordances are typically superimposed over an object to give it the appearance of three sets of handles used for grasping, translating it along an x, y, or z axis, resizing it, or rotating it to view it from any angle. The user simply clicks on the appropriate handle and moves the mouse. It's a clever solution to the problem of designing dimensional objects on a flat 2D screen. In this book, we'll extend the idea of affordances to the realm of metaphor, whereby we apply conceptual handles to complex packets of abstract information by relating them to other, more tangible concepts so they can be stretched, rotated, and scaled for more precise manipulation.



Say we have two groups within a company, each with a unique microculture. We want to develop methods for these two groups to work together effectively. We can illustrate the elaborate process of creating connections and overcoming divides between the two groups using the “building a bridge” metaphor. To tease out the smaller steps involved in this process, we extend the metaphor to sub-task affordances that include surveying the landscape (researching the cultural backgrounds of each group), laying the foundation (establishing trust and

respect), erecting the supports (creating shared goals, scheduling workshops), and so on.

For the same task, we could instead use the metaphor of cultivating a garden, which involves the affordances of preparing the soil (creating a welcoming environment), planting seeds (initiating collaborative conversations), watering and nurturing (continuous support), and all the rest leading up to harvest. Where the bridge metaphor effectively underscores the need for a robust structure, it deemphasizes the ability to adapt to growth and changing conditions. The metaphor we choose for resolving a divide has real implications for the manner in which we resolve it. As Lakoff and Johnson point out in *Metaphors We Live By*:

Metaphors may create realities for us, especially social realities. A metaphor may thus be a guide for future action. Such actions will, of course, fit the metaphor. This will, in turn, reinforce the power of the metaphor to make experience coherent. In this sense metaphors can be self-fulfilling prophecies.

If we're steeped in the affordances of bridge-building, we will likely prioritize creating processes and engineering precise solutions that facilitate clear communication between the two groups. If we're steeped in the affordances of gardening, we will likely focus on fostering healthy relationships and providing pathways for change management as the teams grow and evolve. Metaphors matter because they're powerful tools. In a quote often misattributed to Marshall McLuhan, Father John Culkin (a close friend of McLuhan's) once said, "We shape our tools and, thereafter, our tools shape us."

The Vital Remainder

The lightbulb changed the circadian rhythm of every human being with access to electricity. The automobile changed the shape of the planet's surface, and its bottomless thirst for fuel changed the cultural and political landscape of the Middle East. One has to wonder, then, about the effects of perpetual immersion in the iconography of office work, where every action we take using our computers employs the dismal metaphors of the white-collar career environment. It's clear that Microsoft was thinking about this when they released *Microsoft Bob* in 1994. *Bob* was marketed as a "real-world interface," with the traditional grey background and desktop icons replaced with a cartoonish living room and a canine virtual assistant named Rover.

Bob might have succeeded in the market had it not been so resource-intensive, requiring machine specs that were beyond the reach of most casual home users. It sold fewer than 60,000 copies, and Microsoft quickly abandoned it. *Bob* did leave some notable legacies, however. Rover "evolved" into the notorious virtual assistant, Clippy, released with *Windows 97*. A designer developed a font for Rover's speech bubbles, but completed it too late for incorporation into the operating system. Microsoft included the font in later product releases, and we can still see its ubiquitous and often dubious use today. It's called **Comic Sans**.



Microsoft Bob home screen

Bob never gained a foothold among users, but the attempt at humanizing the computing experience underlines a fundamental truth: the design of our digital tools affects our psychology and behavior as end users. The latent message embedded in the visual metaphors of the soulless desktop environment - that computers are primarily for work - has influenced how we think about and interact with this technology. And beyond that - how we think, feel, and act at large.

Since the desktop gained its pixelated foothold, only a few other contenders have tentatively approached the user interface paradigm stage. The zooming user interface (ZUI) of *Pad++* made its debut in the late 1990s, using infinite zooming rather than clicking and loading new pages to explore files and documents. The idea is that

we can navigate more intuitively this way, maintaining visibility on the broader context of how we got to where we are. Users of a zooming interface can move more quickly between tasks without as much clicking and window management, reducing the cognitive costs of context switching. Alas, by the time *Pad++* was introduced, WIMP had already deeply metastasized in the public's mind. It failed to gain any real traction among users.

There was also the Canon Cat, with its no-frills text-based interface, which we navigate using two special keyboard buttons called Leap Keys. Built by former Apple engineer Jef Raskin and billed as the “people’s computer,” it was one of several post-WIMP alternatives he tried to get off the ground. Raskin authored a manifesto-style book called *The Humane Interface*, arguing that the unnecessary distractions and decision points of the WIMP experience limit our minds and work. While Raskin still has a posthumous following, his message has yet to resonate with the masses.

Other paradigms lurk in the wings, waiting for an inflection point in the culture to cue them into the spotlight. For now, though, we continue to click, double-click, and drag and drop icons into folders. We name the folders, classifying all their contents into themes and categories. The imposed conceptual hierarchy of the WIMP paradigm makes library scientists of us all. In the words of tech pioneer Ted Nelson, coiner of the term *hypertext*:

Hierarchy is the official metaphysic of the computer world. Today's hierarchical computer tools impose hierarchy where it may not exist; they can model the hierarchical

aspects of the world but not the vital remainder. They teach beginners that it's the necessary structure of computers and the universe.

This isn't to suggest that the universe is not hierarchical in nature, because it may very well be. But do we really want Xerox to shape that idea for us? Metaphysical implications exist within our interfaces that go deeper than the skeuomorphic icons and naming conventions. The very structures of the systems in which we work and play shape us as we navigate them, quietly forging ambient assumptions about the structure of reality. Once the average user internalizes the affordances of an interface, the interface becomes as invisible as water to a fish. Conventions morph into institutions that we take for granted, and these institutions become frozen by inertia born from vested interests, code dependencies, and user habits. Witness the tidal wave of rage when a social media company rolls out an interface update to its app or website to understand what companies are up against when they seek to make meaningful changes to the user experience.

Ambient Assumptions

Fred Jameson once said, “It’s easier to imagine an end to the world than an end to capitalism.” The quote resonates because it’s clear upon reflection how thoroughly we fish have metabolized all the principles of the economy we swim in as if they were the watery substrate of reality itself. There are so many vested interests and institutions built around the structures of capitalism that replacing it with another economic model would equate to rewriting the code base of the operating system for human civilization. Even on the other “side” of the falsely imposed spectral dichotomy between capitalism and communism (the totalitarian strawman that capitalists provide as the only alternative), we see communist implementations that are merely adjustments of the bureaucratic dials of capitalism. If humanity has not been able to produce a meaningful update to the idea of a computer operating system since Xerox demonstrated its desktop metaphors in the late 70s, then the same species producing a just and sustainable economic model indeed seems less likely than an imminent global cataclysm.

Capitalism hides from criticism by assigning an air of inevitability to its mechanics. Capitalists frame the affordance of the profit

motive as the only handle we can apply to move innovation forward. They frame the affordance of financial incentives as the only handle we can use to scale growth (and growth must always scale up). These frames are built from networks of subjectively assumed beliefs in disguise as objectively self-evident truths. Capitalists frame the limits of human imagination as the limits of reality using a pernicious form of ontological propaganda interwoven with the ontologies of scientific materialism. And this is not an accident.

Ontological materialism, the view that physical substances constitute all of reality, asserts that not only do all objects and particles consist entirely of matter, but all experiences, perceptions, and phenomena result from interactions between matter. Consciousness, in the materialist model, is an illusory phenomenon that emerges from the neural complexity of brain activity. This view of reality is the default cosmology of most polite, educated members of society. Even those who don't consider themselves scientists have fully integrated the materialist worldview as the prism through which they view the universe, making it easier to embrace the tenets of an economic system that uses free-market competition (the analog to nature's deterministic natural selection) and quantifiable outcomes (GDP, bank account numbers) as the measures of a successful society. Karl Marx, an avowed materialist, had no qualms with material *per se*. His gripe was with who controlled the means of producing material goods, and how this control led to exploitation - not with the inherent value of the material itself.

While there are many objections to ontological materialism from scientists such as Heisenberg, Schrödinger, and Planck and

philosophers such as Kant, Hegel, and Berkely, it's still taken for granted by most secular folks that only matter is fundamentally real. Materialism is a theoretical model that describes the fundamental nature of reality, yet many who use this model as their prism for apprehending reality fail to recognize it as such. Their cosmology is ambient, taken for granted, and rarely interrogated as the metaphysical assumption that it is. Often bundled with materialism is the idea that a scientist must adopt its metaphysical assumptions to do science, but this is simply untrue. Whether the universe is the eternal dream of a cosmic turtle or was born from the explosion of an infinitely dense particle, E still equals mc^2 . Science deals with measurable matter and energy, and the predictability of these does not hinge upon the why and how of matter's existence, nor does it rely on its metaphysical fundamentality. The operating system of materialism is not required to run the application of science. Science can operate on any stable platform with a coherent code base.

This brings us to ontological idealism, a metaphysical model that assumes that reality is fundamentally mental in nature, with material as a manifestation of consciousness. Idealism suggests that the human brain, while demonstrably related to consciousness, does not create consciousness, but instead interacts with and modifies how consciousness manifests itself (in beings with brains, of course). There are assorted colors within the idealist spectrum. The pansychists posit that all particles are, to some degree, conscious. The Platonists see the material world as a shadow or echo of ideal metaphysical forms. The absolute idealists see all distinctions, objects, and experiences as illusory facets unfolding from a singular mind. Experiential idealists see reality as shaped

by the interactions and experiences of all sentient beings, with the universe as an emergent property of a vast network of collective experiences. The experientialist William James, who we'll come back to later, was the teacher of the psychologist and philosopher E.B. Holt, who was, in turn, the mentor of J.J. Gibson - coiner of our beloved term *affordances*.

Cognitive scientist Donald Hoffman sees matter as equivalent to icons on the screen that we call perception. His multimodal user interface (MUI) theory states that "perceptual experiences do not match or approximate properties of the objective world, but instead provide a simplified, species-specific, user interface to that world." In other words, evolution has provided us with a desktop interface to mask the irrelevant complexity of the underlying code of the operating system of reality. In his TED talk, "Do we see reality as it is?" Hoffman says:

It's not there to show you the reality of the computer. In fact, it's there to hide that reality. You don't want to know about the diodes and resistors and all the megabytes of software. If you had to deal with that, you could never write your text file or edit your photo.

[...]

Once we let go of our massively intuitive but massively false assumption about the nature of reality, it opens up new ways to think about life's greatest mystery. I bet that reality will end up turning out to be more fascinating and unexpected than we've ever imagined.

When its metaphysical frameworks are laid bare, ontological idealism reveals striking similarities to the essence of mysticism. The concept of universal consciousness in objective idealism resonates with mystical notions that a divine cosmic mind underpins all existence. Transcendental idealism, which cites the mind's role in shaping reality, mirrors mystical teachings about the externally transformative power of thought. The absolute idealist notion that all separation is illusory runs parallel to the concept in Neoplatonism that reality emanates from a single point of consciousness, often referred to as the Monad. Neoplatonism is a conceptual ancestor to much of Western mysticism and occultism.

The word “occult” comes from the Latin *occulere*, meaning “conceal” or “cover over,” as one covers things while tilling the soil (“cultivate” is an etymological cousin). The occulted nature of reality in Hoffman’s MUI theory, with an unseen, timeless metaphysical realm helpfully covered over by the affordances of space and time, perfectly demonstrates how neatly these idealist models fit with mystical themes. When we examine the ontology of a computer’s operating system, we find application layers that parallel the hierarchical strata of Neoplatonic realms. The system’s kernel is the indivisible Monad or Source, the background utilities and processes are the Nous or divine intellect, and the application programming interface (API) is the Psyche or World Soul. The operating system’s deeper, esoteric layers are the realms of hidden forces that interact with the interface’s visible, exoteric elements, representing the Neoplatonic material world. For most users, the interface layer is all that concerns them. They can happily go from the cradle to the grave, interacting with the icons and menus,

blissfully unaware of the deeper processes those icons represent. The typical user requires no knowledge of the correspondence between the icons and the myriad processes that underwrite the actions they initiate. There are, however, affordances for so-called power users and system administrators who want to access these deeper layers. An administrator of a *Windows* system can bring up the command line to invoke occult functions like DiskPart, which they use to manage disk volumes and partitions in a more detailed and advanced manner than the graphical, exoteric Disk Management tool.

We could zoom out even further and encompass within our model the hardware controlled by the kernel's binary machine code. The ones and zeros of binary code are affordances that allow programmers to correlate software commands with the behavior of transistors inside the central processing unit (CPU), which act as logic gates, switching between on and off positions. All digital reality emanates from the billions of polarity reversals within the semiconductors. As above (in hardware), so below (in software).

Mapping Polarity

The *I Ching*, also known as *Book of Changes*, is a mystical Chinese text that dates back over 3,000 years and is still used today as a philosophical reference and a divination manual. The *I Ching* comprises 64 hexagrams, each made of lines that are either broken (yin) or unbroken (yang). Each line in a hexagram is a binary digit, with a broken line as the 0 and an unbroken line as the 1. The structure of these hexagrams maps to Boolean logic, which is the basis of digital circuit design and programming, and the combinatorial aspect of the hexagrams parallels information states in computing. Just as the polarities of the binary system encode information in digital systems, the *I Ching* encodes information about the natural world and human experience.

The Swiss psychiatrist Carl G. Jung discussed the *I Ching* in his book *Synchronicity: An Acausal Connecting Principle*, which outlines his theory about meaningful coincidences - a theory he co-developed with Wolfgang Pauli, a Nobel prize-winning pioneer of quantum physics. Jung's theory of synchronicity includes a metaphysical mechanism by which two events connected by some shared meaning can fall together in space and time through an acausal principle of attraction. This mechanism translates not

only to random manifestations of astonishing coincidences, but also to divination and astrology, which are methods for revealing these connections.

The *I Ching* user casts three coins or yarrow stalks to generate a hexagram. The querent then finds the corresponding hexagram in the *I Ching* text, which provides guidance and insights related to the question or situation at hand. Pictured here is Hexagram 23, called “bō”. It indicates splitting apart, removal, or separation.



The user or interpreter employs intuition to identify how the text relates to their question - the same technique used in divination methods like tarot. In *Synchronicity*, Jung explicitly ties divination to his theory:

The method, like all divinatory or intuitive techniques, is based on an acausal or synchronistic connective principle. In practice, as any unprejudiced person will admit, many obvious cases of synchronicity occur during the experiment, which could be rationally and somewhat arbitrarily explained away as mere projections. But if one assumes that they really are what they appear to be, then they can only be meaningful coincidences for which, as far as we know, there is no causal explanation.

Those with a cursory understanding of divination and astrology often assume that these techniques are supposed to work via interventions from supernatural entities, or, in the case of

astrology, physical influences of the material of celestial bodies. This misapprehension stems from an assumption of causality, wherein the divinatory result must be caused by some agent or force acting upon it. The mystical worldview, however, operates on the metaphysics of idealism, in which the querent's state of mind corresponds with external reality through an acausal sympathetic resonance between the inner and the outer; the above and the below. No influence or energy transfer is required.

In his book *S.S.O.T.B.M.E: An Essay on Magic*, the occultist Ramsey Dukes explains the function of randomness in divination as the querent drops yarrow stalks, flips coins, and shuffles cards. Dukes employs the affordances of personification (higher intelligence), which is not meant to be taken literally. It's merely a conceptual handle for grasping the unfathomable complexity that underwrites the process:

Reduced to essence it is this: we seek an answer to a question and we believe that there is a greater intelligence which knows the answer better than us (and we may choose to believe that the intelligence lies within us or without). In theory we could simply sit and meditate and hope to speak directly to that intelligence. In fact the signals are very weak, so weak that we choose to amplify them by superimposing random noise in the form of shuffled cards, yarrow stalks, or the swirling of tea leaves - examples which seem to deliver about the right level of noise to resonate with the psychic data. Scientists deny the value of this technique even though they find it practiced in nature, where random noise is used to resonate with weak signals and make them easier to detect.

Dukes is invoking *stochastic resonance* here, which is used in signal processing to tease out weak signals from background noise by introducing a floor of controlled noise to the system. In nature, the brain utilizes the same principles to enhance and transmit neurochemical signals, which are very weak. Neurons exhibit intrinsic noise due to the random opening and closing of ion channels in their membranes, similar to the polarity switching of binary code. This noise provides a resonating medium for the weak signals, ensuring they have sufficient power for their journey through the gamut of brain cells.

While we're drawing parallels to scientifically observable and repeatable phenomena, we should remember that these comparisons are metaphorical; meant to provide a cognitive bridge between the causal and acausal mechanisms of physics and metaphysics, respectively. Our metaphors serve as a map that can orient us, but we must be careful not to conflate the map with the territory, as the semanticist Alfred Korzybski warns us:

The map is not the territory; the word is not the thing it describes. Whenever the map is confused with the territory, a 'semantic disturbance' is set up in the organism. The disturbance continues until the limitation of the map is recognized.

Semantic disturbances indeed arise when we become too invested in one metaphor over another. One way to avoid the confusion and error that result from too deeply internalizing the conceptual affordances of a single framework is to embrace a pluralistic approach to understanding. By acknowledging and integrating multiple perspectives and models, we can maintain cognitive

flexibility and better navigate the complexities of reality. This approach allows us to draw on the strengths of different metaphors and frameworks without becoming trapped by their limitations or misled by the facets of a situation that metaphors can hide. By switching between different ways of knowing, we apply gizmos to the cube of the universe, allowing us to move, rotate, and expand it to reveal its multi-dimensional geometry.

It's not uncommon for scientists to take surprising turns into unscientific modalities when approaching a complex problem. These "rifts," to borrow a term from writer J.F. Martel, "break the consensus trance and open the work to the chaosmos of the Real." Martel uses rifts to denote sudden shifts in tone or atmosphere in works of art that jar the reader in the same way that the perplexing answer to a Zen koan might. Yet, I think it's an apt description of what's happening when a scientist steps out of the materialistic paradigm and views a problem through a different lens. For instance, in computer scientist Alan Turing's 1950 paper *Computing Machinery and Intelligence*, he introduces a wild card to his otherwise academic treatise on artificial intelligence. This is the paper where he proposes and describes his "Imitation Game," commonly known today as the Turing Test - a methodology to determine whether one is dealing with human consciousness or machine intelligence. While outlining the method, he raises a series of potential arguments against his testing method and then provides preemptive rebuttals for each of them. One of those arguments - number 9 - is *The Argument from Extrasensory Perception*, in which he says that since computers shouldn't possess the innate human faculties of precognition and telepathy, high scores on ESP tests would indicate the presence

of human consciousness. This introduces a problematic element to his test, where a human tester with telekinetic abilities could, intentionally or not, influence a machine and cause it to perform well on ESP tests, leading to a false positive for the presence of human consciousness. Therefore, an ESP-proof room or psi-dampening mechanism should be developed to mitigate this potential corruption of the test.

It's worth noting that the paper is a monument to visionary thinking, projecting the emergence of artificial intelligence from a time of vacuum tube-powered computers that were the size of a convenience store, with a storage capacity of about a thousand words. Turing was a certifiable genius who made an enormous impact on the Allied victory of World War II by cracking the Nazis' *Enigma* code. In short, he cannot be easily dismissed as a silly crank. In another part of the paper, he opines:

The popular view that scientists proceed inexorably from well-established fact to well-established fact, never being influenced by any improved conjecture, is quite mistaken. Provided it is made clear which are proved facts and which are conjectures, no harm can result. Conjectures are of great importance since they suggest useful lines of research.

Another computer pioneer who wasn't afraid to rotate the cube was Ivan Sutherland, who in 1963 developed one of the first-ever graphical user interfaces as part of his PhD dissertation project, *Sketchpad*. The filmed demonstration of *Sketchpad* at MIT's Lincoln Laboratory is one of the most legendary tech demos of all time. It features a mechanical engineer using a light pen to draw commands and 3D shapes on the oscilloscope screen of MIT's

famous TX-2 computer. With neither a mouse, keyboard, nor menu, and only a handful of buttons off to the side, the engineer creates complex 3D shapes and snaps them into symmetry. He uses simple gestures with the pen to copy, rotate, scale, and skew the shapes in all the familiar ways we manipulate 3D graphics today, but with a completely different interaction modality.

Sutherland continued breaking ground by developing the first-ever augmented reality prototype in 1968. It's remarkable to witness where Sutherland's imagination could take him without any baseline for existing human-computer interactions aside from knobs, dials, buttons, and punchcards. His mind was untethered to convention, as evidenced by this rift from an essay he wrote in 1965 titled *The Ultimate Display*:

The ultimate display would, of course, be a room within which the computer can control the existence of matter. A chair displayed in such a room would be good enough to sit in. Handcuffs displayed in such a way would be confining, and a bullet displayed in such a room would be fatal. With appropriate programming, such a display could literally be the Wonderland into which Alice walked.

Rather than write off this comment as an out-of-place flight of fancy, we might more usefully categorize it as an abrupt shift to another mode of thought meant to inspire an improved conjecture. In other parts of *The Ultimate Display*, Sutherland describes human-computer interaction technologies that wouldn't even begin to emerge for another 30 years. He introduces voice recognition, eye tracking, haptic feedback

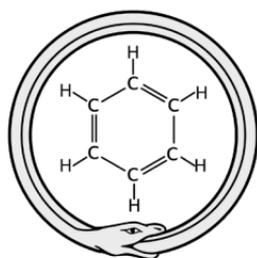
controllers, gesture-based inputs, and foveated rendering, all of which would eventually come to pass. It's unwise to dismiss the rift of a visionary out of hand.

Dream-Logic

Some scientists purposefully rotate the cube out of keen intellectual intuition, while others are thrust into different modalities unconsciously. And by unconsciously, I literally mean while they sleep. Dmitri Mendeleev, for example, struggled to find an elegant method for classifying chemical elements until he dreamt that all of the elements fell into place according to their atomic weight and valence. He woke up from this dream and immediately sketched what would become the Periodic Table of Elements. Elsewhere in chemistry, the chemical structure of the benzene molecule had been a major scientific enigma for years when August Kekulé had a dream about an ouroboros:

My mind's eye, sharpened by repeated visions of a similar sort, now distinguished larger structures of varying forms. Long rows frequently close together, all, in movement, winding and turning like serpents. And see! What was that? One of the serpents seized its own tail and the form whirled mockingly before my eyes. I came awake like a flash of lightning. This time also I spent the remainder of the night working out the consequences of the hypothesis.

Like The Periodic Table, the discovery of benzene's ring-like structure followed years of scientific research and sustained contemplation. Hence, the dreams were not some medium through which a divine intelligence delivered fully-



formed concepts out of whole cloth. They were dramatic modality shifts, where an old problem was viewed through a completely different lens, revealing new facets and details unavailable to the old modality. There's logic to dreams that's built on a metaphysical framework wholly distinct from the logic of waking life. Dream-logic is correlative, not causative. Every element (icon) of the dream correlates to an unconscious process or association behind the interface of people, places, and events within. Acausal links between events abound in the surreal unfurling of our dream scenarios.

Dreams are attempts at an almost interspecies communication, where our deeper, pre-linguistic mind uses the multimodal affordances of narrative, symbolism, and emotion to convey messages to us while bypassing the semantic framework employed by our ego. As a lifelong dream journaler, I take some time most mornings to rationally deconstruct the ephemera of the previous night's impressions into words. Forcing dreams to fit inside the limited boxes of language does them little justice *per se*, but reading them later on leads my mind back to the network of impressions and emotions tethered to my linguistic translation. This is why explaining dreams to others often leaves the audience cold and indifferent. My dream journal is a series of breadcrumbs that lead me back to profound and ineffable experiences. Still, someone else

reading my oneiric entries will find that even the most profoundly described dreams lack somatic affordances for them to grasp. Without a multi-modal embodied experience, dreams are little more than nonsensical background noise to all but the dreamer.

The filmmaker David Lynch collects many of his ideas for film and television from his transcendental meditation practice, which, according to his book *Catching the Big Fish: Meditation, Consciousness, and Creativity*, takes him to deep places within his mind where dream-logic reigns supreme. Many have pointed out the similarities between the plot and atmosphere of his work and the general aura we tend to associate with the dreaming world. Viewers of Lynch's television series *Twin Peaks* frequently compare the show's feel to that of a dream, and the characters within the show seem habitually uncertain of their ontological status, indicated as such by dialogue throughout the series:

- DONNA HAYWARD: I feel like I'm having the most beautiful dream and the most terrible nightmare all at once.
- JERRY HORNE: Is this real, Ben, or some strange and twisted dream?
- AUDREY HORNE: Isn't it too dreamy?
- MADDIE FERGUSON: All I did was come to a funeral, and it's like I fell into a dream.
- PHILLIP JEFFRIES: We live inside a dream!

When the characters of *Twin Peaks* aren't wondering whether they're asleep or awake, they're working their way through a story directly powered by the characters' dreams. The protagonist, FBI Special Agent Dale Cooper, frequently receives actionable intel

from his dreams, which he uses to solve the murder of Laura Palmer, the show's central enigma. In one of those dreams, he discovers a divination technique he uses to push the investigation forward, conveying to the local police the following day that he "subconsciously gained knowledge of a deductive technique involving mind-body coordination operating hand in hand with the deepest level of intuition." Cooper then proceeds to throw rocks at bottles that correlate to his current list of suspects.

Lynch's body of work shows us that he places great value on non-linguistic communication, and sees film and dream as two sides of the same coin. In his book, he illustrates the value of using multi-modal affordances to exceed the capacity of language:

Cinema is a language. It can say things - big, abstract things. And I love that about it. I'm not always good with words. Some people are poets and have a beautiful way of saying things with words. But cinema is its own language. And with it you can say so many things, because you've got time and sequences. You've got dialogue. You've got music. You've got sound effects. You have so many tools. And so you can express a feeling and a thought that can't be conveyed any other way. It's a magical medium.

Protanopia

I first dreamt about the *Windows Color* interface in 2014, ten years before I began writing this book. The theme has recurred several nights since, once appearing as an open-source clone called *RGB*, as in red, green, and blue - the three hues combined by digital displays to create all the colors we see on our devices. Each time I awake from one of these dreams, I feel overcome by the frustration that grips us when we can't get a linguistic handle on a dream experience. A big idea lies just out of reach, only allowing us an oblique glimpse of one of its facets. The design of a revolutionary new way of interacting with computers is stuck at the tip of my tongue, and all I can do is meekly gesture in its general direction.

Suppose a fully formed semantic color interface framework already exists on some Platonic plane, just waiting for a dreamer to pluck it out of the ether and translate it into being. In that case, that dreamer is very unlikely to be me. Although I'm ambitious and foolhardy enough to take a run at something as far outside of my purview as architecting the structure of a new operating system schema, my temerity is dimmed by the limitations of my Protan physiology. In other words, I'm severely colorblind. In preschool, I'd often bring home crayon renderings of brown trees and purple skies. When adults explained to me that I don't see colors the

same way everyone else does, I internalized the understanding from a very early age that color is a subjective phenomenon.

A famous Zen koan asks: “Who is that magician; the master who makes the grass green?” And the answer is, of course, you make it green. Green is a negotiated process between the photons reflected off the grass and your personal nervous system. There’s no objective greenness to grass or blueness to sky. Color exemplifies how what we perceive can be understood from both physical and mental perspectives without reducing one to the other. It’s a phenomenon often cited by proponents of the philosophy of neutral monism (the aforementioned William James being one of them) to demonstrate that the fundamental constituents of reality are neither purely mental nor purely physical, but something more basic that manifests as both. Neutral monism suggests that reality is a function of dual manifestation, requiring both physical processes (like light and optics) and mental processes (neural processing and interpretation) to come into being. None of this metaphysical hairsplitting, of course, made its way into my preschool-age mind. I simply accepted that certain parts of reality are different for me than they are for other people. Personal experience is a beautiful shortcut to profound metaphysical truths.

Around the same time I was teaching myself how to read the colors on crayon labels, I dreamt of two blonde boys my age, running and playing in a vast hall of mirrors against the backdrop of an infinite black void. One of them was taller and carried himself with an air of superiority, his nose upturned, his posture impeccable. The shorter one was hyperactive and vicious, snarling as he charged between the glass panes, teeth bared.

The following morning was my first day at a new preschool, and my kind teacher took a moment to introduce me to the class. This was when I met Aaron - a lanky blonde kid with a permanent smug grin, and Michael - a short blonde terror with attention-deficit disorder. These two boys were an unlikely duo who immediately took me in to form an unlikely trio. It didn't occur then that my dream of them had violated fundamental laws concerning linear causality, so I took for granted that one could dream of an event before it happened. This occurrence was a mere blip in the uncanny milieu of early childhood - an eerie stage of life colored by an alarming proximity to pre-birth oblivion.

The Enchanted World

Whether my mystical proclivities were shaped more by early brushes with proto-metaphysics and precognition or by genetics is hard to say. My paternal grandfather was a chemical engineer and a man of science who was happy to mow the lawn while the rest of his family attended Sunday service. Near middle age, he had a spiritual awakening and decided to change his life completely. When one has a spiritual awakening in Mississippi in the 1960s, one doesn't find themselves overwhelmed with options for devotional living. There were few ashrams or exotic hermitages in the region at the time, so he took the most progressive spiritual path he could find, leaving behind his chemical engineering career to become an ordained Methodist minister. After he died in 2019, I sorted through several document boxes of his handwritten sermons and compiled them into an anthology titled *People of Salt & Light*, after one of his sermon titles.

On the other side of the gene pool, my maternal grandfather was an amateur treasure hunter, Bonzai practitioner, and Fortean writer. He wrote articles about cryptids, UFO encounters, miracles, and the gnostic texts found among the Dead Sea Scrolls. As a young boy, I assumed that all grandfathers spent their retirement years pouring through accounts of giant monster bird sightings.

When the Time-Life book company began pumping 1980s prime time full of commercials for mystical and supernatural book anthologies like *The Enchanted World* and *Mysteries of the Unknown*, I couldn't run fast enough to the landline to rotary-dial the 800 number for our free sample copies. As the (not free) follow-on copies poured in, I spent weeks devouring beautifully bound volumes covering sorcery, witchcraft, magical creatures, ghosts, parapsychology, and dreams.

The metaphysical liminal zone that dreams occupy makes them a natural point of focus for those of us inclined toward spiritual matters. As a teenager, I began my regular habit of dream journaling. Around age twenty-three, inspired by a particularly wild series of coincidences, I started an anomaly file, later dubbed the *X-file*, in which I recorded strange occurrences that would have fit well within my maternal grandfather's case studies. Like when I misdialed a number, and my father answered (it was his new work number, which I did not yet have), or when I was overcome in a parking lot with a premonition that I was about to be in an accident, only to be rear-ended within seconds of leaving my parking space, or when I walked into a bar and found two white-faced former colleagues staring agog at me because one of them had just seconds earlier asked, apropos of nothing, "I wonder what ever happened to Justin Kirkwood?". There are dozens more. As these entries accumulated, it became clear to me how easily I'd have forgotten about them had I not cataloged the experiences. Our modern secular society doesn't provide any respectable affordances for interacting with such events. There's an implicit societal pressure to write these experiences off as coincidences and quickly feed them to the mental shredder, lest we poison our

capacity for rational thought and pollute our minds with woo-woo claptrap. Only in looking back on a lengthy personal record of the phenomena does a preponderance of evidence emerge that these events point to something more strange and elaborate than merely the natural results of statistical inevitability. Only by lending attention and value to our lived experience do we build an enchanted world.

However, sustaining attention on anything among the dizzying distractions of our time is a rather tall order. And as career, money, and socioeconomic status pulled focus, my enchanted world blurred into the background. When my copy of Robert Anton Wilson's mind-bending mystical essay *Cosmic Trigger* would catch my eye on the bookshelf, I'd shamefully scan past it and rest on the more respectable works by Malcolm Gladwell and Chris Anderson, who assured me that they were gleaning powerful, counter-intuitive insights by looking at the world through the most radically novel prisms imaginable. I was now a grown-up; it was time to put away childish things and buckle down into the practical concerns of a mundane adulthood. Less time contemplating the magical happenings of yesteryear, more time scrutinizing the details of our retirement accounts. Then, one morning in 2011, at the center of this season of disenchantment, I wrote down the following dream:

I'm sitting among a sparse audience in an ancient Greek amphitheater. A former client of mine, Khalid, stands in the orchestra area, clad in a toga, delivering a lecture. For a few seconds after I awoke I could hear a sort of mental after-echo of his name repeating on a loop.

This man was not a particularly notable client of mine. I'd taken him to lunch a couple of times a year or so prior, but little business resulted from it. He was an Electrical Engineering PhD, so it made sense that my dream would place him in an academic setting. Other than having his name stuck in my head, I didn't think much of it. I recorded the dream and went about my day. A few hours later, in a coffee shop, awaiting my drink order, I found myself studying a large abstract mural on the wall of the seating area. After a few moments of idle, pre-caffeinated inspection, I realized that the mural wasn't abstract, but was a washed-out panorama of the ruins of an ancient Greek amphitheater. Astonishment began to build as I realized this view looked exactly like the view from my dream, and at that moment, a hand appeared in front of my gaze and waved. It was Khalid saying hello.

When an event like this occurs, you find yourself at an epistemological crossroads. Down one road is the self-assurance that a better understanding of statistics would mitigate your astonishment over this convergence of events, falling back into the arms of faith that *there surely must be a rational, scientific explanation*. The fact that you can't see or understand the explanation doesn't mean it's not there, but there is no need to modify your model of how the universe works. You've made your choice, reinforced by all the accomplishments of the scientific method, and you're sticking with it. If science can get us to the moon, it can surely account for this coincidence.

The other road is not a straight line to a logical destination, but a path that quickly forks into countless tributaries of possible conjectures. These rude roads are mostly unlit, requiring work on your part to find your bearings as you traverse them, but as

you do, you'll see evidence that others have been there before you. Many of those travelers are brilliant thinkers with coherent worldviews that account for the vital remainder of experience not cataloged by rational materialism. Each exploration of one of these roads is another turn of the cube, and each revelation of a new facet also reveals how much of your worldview depends on assumptions about the fundamental nature of reality. You realize that you must either justify all of the metaphysical premises on which your episteme rests, or entertain some new possibilities, making epistemological modifications and seeing how they *feel* when lived in. The mystical perspective considers the felt nature of direct experience a viable affordance of understanding.

In response to the Khalid dream, I took one of the roads of intuition that was now overgrown but still familiar and traversable due to my earlier life experiences. One of my first stops was a book written in the 1920s called *An Experiment with Time*, in which the author, a mechanical engineer named J.W. Dunne, tries to reason through various scientific and metaphysical conjectures to explain his own precognitive dreams. The main thrust of his theories is that in the sleep state, whatever brain function normally protects our perception of linear time becomes inhibited, creating temporary membrane permeability between our consciousness and information from the future. Dunne's theory isn't too radical a leap for a person who accepts Einstein's universe model, where time isn't a separate, absolute entity, but rather a dimension that's inextricably linked with the three dimensions of space. This leads to a "block universe" in which all events - what we perceive as past, present, and future - exist simultaneously within this four-dimensional spacetime continuum. The distinctions between

past, present, and future are merely a result of our consciousness navigating through this spacetime block, and the only thing keeping us linearly oriented is some hereto unknown function of our brain. There is actually no mysticism in this theory, merely scientific conjecture.

I then returned to Jung's *Synchronicity*, where I took new note of his many references to Pierre Janet's concept of *abaissement du niveau mental*, a slackening in the tone of consciousness brought about by fatigue, intoxication, shock, or simply moving into the corona of the sleep state, in which unexpected contents of the unconscious may emerge. Many of us will be familiar with that fuzzy, liminal state of mind and body we sometimes wake into, where we still have ready access to dream-logic. For me, this state is marked by a slightly vibratory feeling all over my body, accompanied by heavy sheets of visual snow when I close my eyes, similar to the static of a detuned television. And for reasons I will explain later, I've come to call this state **The Indigo**.

One night in the year 2000, I woke up at around 3am in the thick of **The Indigo**. I sat up in bed with a fully formed poem in my head. The words were almost auditory, and I could already "see" how they were meant to be formatted on the paper. I quickly grabbed a pen and performed what I can only describe as a transcription. After a few minutes, the stream slowed to a trickle and then stopped altogether. I woke up the following day to find I'd scribbled a surreal fever dream of a poem centered around the ethical treatment of animals. A brief sample:

it is time for children to learn the mossy pain
of bears a foil of charge for cool nights
about sixteen days from the whistles of shade
be enormous as thunder and still expectant like pups
to be kind to animals and shuffled in hot burner fields
to rent curb space for a taciturn miller
a windmill spinner
full enormous with hope and muscle threads
salt poured through vents for breathing sent
scientists thumping out on soil
mud on their white smocks and power tied empathy
disdain for dolphins
what's this? there is no fruit of the sea
watch this. there is nothing to see

Because of the strange power of this state to connect with the normally walled-off parts of my mind, I entertained the notion after the Khalid dream that **The Indigo** correlated with Dunne's state in which temporal membrane permeability becomes possible. I decided to experiment, leaving a pack of shuffled cards on my nightstand, hoping that one night I'd wake up in that state, at which point I'd pick a random card and try to guess what it was before revealing it to myself. Fortunately for my experiment, I woke up in this state within a week.

My eyes fluttered awake in the middle of the night, my body buzzed, and I could clearly see the sparkling visual snow on the

back of my eyelids when I blinked. Eyes closed, I reached over to the deck of cards and drowsily pulled one out. Immediately, a perfect, crisp image of the Seven of Diamonds appeared in my mind's eye. I turned the card over to find that I was, in fact, holding the Seven of Diamonds. The slight breath that escaped me at that moment was the same one I'd let out when Khalid's hand appeared in front of me at the coffee shop. It's the sharp exhale of epistemological astonishment.

For weeks after this, I shuffled the deck every night before bed, setting it on the nightstand for easy access. One night, I forgot to bring the shuffled deck upstairs to my bedroom, leaving it on the dining table below. I dreamt that night that I woke up and went downstairs to fetch the deck, and when I picked it up, I closed my eyes and saw an image of the Queen of Hearts. I picked up the deck and removed a random card, which was the Queen of Hearts. The astonishment woke me up, at which point I immediately went downstairs to the deck of cards on the table, picked it up, and randomly withdrew the Queen of Hearts.

Corroborations

More experiments followed in the weeks after these card draws, but I couldn't replicate the results. No more precognitive dreams came, and I did not wake up in **The Indigo** again. I searched for others who'd conducted similar self-experiments and came across the novelist Upton Sinclair's odd book *Mental Radio*, his account of a series of telepathy experiments he performed at home with his wife, Mary Craig. Upton would draw pictures and then attempt to transmit them to her mentally from across the house. Mary would slip into a relaxed and meditative state and then draw the first visual impressions that came to her. Of the 290 trials documented by the book, 70 were failures, 155 were a partial match, and 65 were undeniably spot-on. Upton's friend Albert Einstein wrote the preface to the German edition of the book, writing:

The results of the telepathic experiments carefully and plainly set forth in this book stand surely far beyond those which a nature investigator holds to be thinkable. On the other hand, it is out of the question in the case of so conscientious an observer as Upton Sinclair that he is carrying on a conscious deception of the reader world; his good faith and dependability are not to be doubted. So if

somehow the facts here set forth rest not upon telepathy, but upon some unconscious hypnotic influence from person to person, this also would be of high psychological interest.

While it may seem shocking to see one of our most renowned scientific minds entertaining such a taboo idea as telepathy, this is not even remotely unprecedented. Einstein was a great admirer of the Austrian physicist Wolfgang Pauli, Jung's collaborator on the concept of synchronicity. Einstein nominated Pauli for the Nobel Prize in Physics, which he won in 1945 for discovering what came to be known as the *Pauli exclusion principle*. Pauli, who could generally be considered a skeptic, was nonetheless associated with a strange phenomenon where laboratory equipment would habitually malfunction whenever he was present. It became a running gag among his colleagues, who half-jokingly attributed the mishaps to a supernatural influence they dubbed the *Pauli Effect*. It was taken seriously enough that some scientists would request he stay away from their laboratories during delicate experiments. While he never formally commented on the phenomenon, he acknowledged and accepted the effect with a sense of humor. Warner Heisenberg, developer of a famous uncertainty principle, once said of his friend Pauli:

Behind [Pauli's] outward display of criticism and skepticism lay concealed a deep philosophical interest even in those dark areas of reality of the human mind that elude the grasp of reason. And while the power of fascination emanating from Pauli's analyses of physical problems was admittedly due in some measure to the detailed and penetrating clarity of his formulations, the rest was derived from a constant contact with the field of creative processes, for which no rational formulation as yet exists.

The collaboration between Pauli and Jung began in the early 1930s when Pauli sought Jung's help with picking up the pieces of his life shattered by a divorce, the suicide of his mother, and a recently acquired habit of drinking into the long hours of the night. Jung was astonished to discover that Pauli had a preternatural capacity for dream recall and went on to record hundreds of his dreams for use, not only in Pauli's therapy, but in the development of his dream analysis theories. Intrigued by Pauli's vivid dreams and their potential symbolic meanings, Jung saw an opportunity to explore the intersection of psychology and quantum physics. Together, they applied some of the affordances of quantum phenomenology to rotate and examine the mysterious and often perplexing ways inner experiences could mirror external events. They fleshed out their theories in a volley of letters spanning more than two-and-a-half decades, from 1932 to 1958. A few years into the correspondence, Pauli conceded that some aspects of reality were beyond the grasp of the quantifiable, writing: "After a careful and critical appraisal of the many experiences and arguments, I have come to accept the existence of deeper spiritual layers that cannot be adequately defined by the conventional concept of time."

For a scientist to endorse acausality with no hard evidence to back it up is quite a heresy. Even if his mystical beliefs had no bearing on his scientific study, a scientist is expected by his peers to keep a sort of intellectual decorum. Eyebrows are raised when someone of Pauli's stature steps outside of the scientific materialist box, and this wariness is somewhat understandable, for what assurances do we have that engagement with the mystical worldview will not adversely affect scientists' theories? Give a mystic an inch, after all, and they'll take a mystical mile. *

This fear of intellectual corruption was clearly not shared by one of our greatest scientific minds, on whose historical shoulders our physics-based model of the world stands. When he wasn't inventing physics as we know it, along with the calculus to describe it, Sir Isaac Newton was secretly reading and writing about the spiritual science of alchemy. Massive volumes of alchemical treatises and experimental records were posthumously discovered among his possessions, revealing that he saw alchemy as a path to discovering hidden spiritual truths about nature. He viewed the universe as governed by divine laws, and believed that discovering these laws was an act of understanding God's majestic design. Jung fleshed out much of his theory of the collective unconscious in a series of writings compiled into the book *Psychology and Alchemy*, in which he reframes alchemy as infinitely more than the naive quest of medieval pseudoscientists to convert literal lead into literal gold. His take on alchemy puts The Great Work, as it's called, into the context of personal psychological transformation.

For Jung, each stage of the alchemical process corresponds to a stage of the individuation process, whereby an individual moves from fragmentation to wholeness. The nigredo, or blackening phase, represents deep introspection and confrontation with one's shadow, the darkest parts of the psyche. This stage is crucial because it symbolizes a kind of psychological death, the breaking down of the old self that precedes transformation. The alchemical journey then moves towards albedo, the whitening phase, where purification and clarification of the psyche occur, often seen as a cleansing and renewal of the mind and spirit.

Citrinitas follows, known as the yellowing phase, where the insights manifest more clearly, and the conscious and unconscious

integrate. Finally, the process culminates in the rubedo, the reddening phase, symbolizing the completion of the work where the individual achieves wholeness and self-realization. This stage represents the coalescence of opposites, a fundamental theme in alchemy known as *solve et coagula* — to dissolve and coagulate. The psyche is broken down in this phase, analyzed, and recombined into a new state of being.

Correspondences

The practice of alchemy has a more enduring legacy than most realize. Its vestiges remain deeply embedded in our language. It's the etymological ancestor of the word *chemistry* (from the Arabic *Al-Kimyā*, meaning “the transformation”). Traces of alchemy linger in the language of booze, as well. Alchemists believed that distilling a liquid is a method for revealing its inner spirit, which is why we call distilled liquors *spirits*. Spirit was considered the “fifth element” of alchemy in addition to the four classical elements: earth, air, fire, and water. This is where we get the term quintessential - from the Latin *quinta essentia*, meaning “fifth element.”



The alchemical symbols for man/Mars (left) and woman/Venus (right)

The gender symbols are another alchemical artifact, symbolizing the correspondence between the masculine and feminine energies and the planets Mars and Venus. The days of

the week have similar planetary correspondences from alchemy and astrology, which extend to corresponding pagan deities.

| Day of the Week | Celestial Body | Alchemical Element | Alchemical Symbol | Roman God | Greek God | Norse God |
|-----------------|----------------|--------------------|-------------------|-----------|-----------|-----------|
| Sunday | Sun | Gold | ☉ | Sol | Helios | Sunna |
| Monday | Moon | Silver | ☾ | Luna | Selene | Máni |
| Tuesday | Mars | Iron | ♂ | Mars | Ares | Tyr |
| Wednesday | Mercury | Quicksilver | ☿ | Mercury | Hermes | Woden |
| Thursday | Jupiter | Tin | ♃ | Jupiter | Zeus | Thor |
| Friday | Venus | Copper | ♀ | Venus | Aphrodite | Freya |
| Saturday | Saturn | Lead | ♄ | Saturn | Cronus | Loki |

The element known as quicksilver gradually adopted the name of its alchemical correspondent, mercury. It's no accident that Wednesday, a liminal day that's neither the beginning nor the end of the week, corresponds to the liminal element that's neither liquid nor solid yet paradoxically embodies both. This is the nature of the *principle of correspondences*, a foundational concept in esoteric traditions that posits everything in the material world is linked to a higher, often spiritual counterpart. This interconnection extends through all levels of reality, forming a universal network of connections that allows us to trace the primal energies and principles animating the cosmos.

The idea of correspondence is central to Hermeticism, an ancient philosophical, religious, and spiritual tradition that explores the relationships between the divine and the material.

Hermeticism hinges on the axiom “As above, so below; as below, so above” to convey that the actions and processes of the universe mirror those of the Earth and vice versa. By understanding these correspondences, Hermeticists believe they can uncover the underlying spiritual truth governing the physical world and grasp those truths to influence their environment and experiences. Hermeticism offers affordances for accessing deeper layers of knowledge by framing signs and symbols as handles we can use to engage with divine or universal principles. Hermeticism and alchemy are deeply connected, sharing philosophical roots and symbolic languages. Often considered the practical application of Hermetic principles, alchemy views its work as a microcosm of universal processes. Just as Hermeticism teaches about the correspondence between the macrocosm (the universe) and the microcosm (the individual), alchemy embodies this principle through its various transformation processes.

An ancient set of texts called the *Corpus Hermeticum* is attributed to Hermes Trismegistus, a legendary figure associated with the Egyptian god Thoth and the Greek god Hermes. Hermes was an appropriate handle (affordance) for this amalgam figure because of the Greek god’s association with wisdom and magic. The caduceus, a staff enveloped by two intertwining winged serpents, was the staff of Hermes, symbolizing wisdom. In the US, many organizations have widely and incorrectly deployed the caduceus as a symbol for healing, which stems from conflating it with the Rod of Asclepius, a different symbol from Greek mythology.

Asclepius was the god of healing and carried a staff enveloped by a single wingless serpent. Until the 1940s, physicians who were reciting the Hippocratic Oath swore by the gods Apollo,

Asclepius, Hygeia, and Panacea to do no harm to patients. Take note the next time you're out and about - most US ambulances correctly display the Asclepius staff on their decals, but almost all consumer medical products and insurance paraphernalia still incorrectly pepper their wares with caduceus imagery.



The Rod of Asclepius, symbol of healing (left), and the Caduceus of Hermes, symbol of wisdom (right)

The staff of Hermes surfaces again in the alchemical symbol for the element quicksilver, aka mercury. While it seems at first glance to be an anthropomorphic representation of a horned figure, the alchemical symbol for mercury is not a horned person but a caduceus. See Hermes holding the caduceus below in this depiction of his role as a psychopomp - one who leads souls into



the afterlife, underscoring his status as a liminal figure who stands at the threshold of worlds, concepts, and states of being. This nature passes onto his correlations like mercury (the metal) and Wednesday, as well as his child, the mercurial, dual-sexed god, Hermaphroditus.

Exoterica and Esoterica

Another thinker on whose legacy many later scientists stood was the 16th-century Italian philosopher, mathematician, astronomer, and Hermeticist, Giordano Bruno. He was among the first to propose that the stars we see at night are suns like ours, orbited by their own planets. Bruno suggested that the universe is infinite and contains an endless number of inhabited worlds, a radical idea that challenged the geocentric model of the universe. These ideas extended the heliocentric Copernican model, suggesting that the universe was much larger and more complex than previously thought. Bruno used Hermetic ideas as the foundation for his philosophical system, which integrated elements of magic, memory, and monism. He believed that through the practice of Hermetic magic and the cultivation of advanced memory techniques, one could access deeper truths about the nature of reality and achieve personal and spiritual transformation. Naturally, he was burned alive by the Catholic Church.

Born in France a few years after the Church turned Bruno to ash, René Descartes, one of the founders of modern scientific thinking, considered the mind or soul the immortal source of all knowledge. Descartes had mystical experiences, most notably a series of divinatory dreams in 1619. These visions motivated him to explore a new path in philosophy and mathematics. Like

the deeply mystical Pythagoras before him and Newton after, Descartes believed the universe could be understood through mathematical principles, seeing math as a bridge between the material and spiritual realms. Luckily, Descartes was able to escape the fates that befell his intellectual predecessors Bruno (immolated), Galileo (placed under permanent house arrest), and Vanini (tongue cut out, strangled, burned). However, he did face vocal, non-lethal opposition from the Church.

The religious objection to mysticism stems from all sorts of institutional self-preservational impulses. The institutions of religion don't benefit from the direct experience of the mystic, whose encounter with the divine is direct and without mediation or an established venue. If a mystic can commune with the sacred without the intervention of a priest or the insulation of church walls, an institution may see itself as potentially dispensable. It could, in theory, happily focus on maintaining doctrinal purity, preserving its monopoly on what is and isn't spiritual truth. A problem arises, however, when a person receives new information that contradicts the established doctrine during their solitary divine communions. There's no organ within organized religion for metabolizing revelation. Mystical insights must be labeled as heresy to preserve the integrity of doctrine, lest epistemological chaos ensue.

In their works on comparative religion and comparative mysticism, William James and Aldous Huxley, respectively, trace the world's organized religions back to their origins in ecstatic experience and pre-taboo mystical revelation. Inspired by direct experience with divinity, religion tends to get filtered over time through individual egos and political expediency, calcifying the

vitality of the core revelations into dogma. The Benedictine monk Br. David Steindl-Rast illustrates this hardening process:

The beginnings of the great religions were like the eruptions of a volcano. There was fire, there was heat, there was light: the light of mystical insight, freshly spelled out in a new teaching; the best of hearts aglow with commitment to a sharing community; and celebration, as fiery as new wine.

The light of doctrine, the glow of ethical commitment, and the fire of ritual celebration were expressions that gushed forth red hot from the depths of mystical consciousness. But, as that stream of lava flowed down the sides of the mountain, it began to cool off. The farther it got from its origins, the less it looked like fire; it turned into rock. Dogmatism, moralism, ritualism: all are layers of ash deposits and volcanic rock that separate us from the fiery magma deep down below.

However, religion's mystical core often survives through esoteric orders. While the outer, exoteric layer of the institution may have hardened into unyielding igneous rock, there's still a molten living center connected to direct, lived experience. We see this in the esoteric orders of Islamic Sufism, Jewish Kabbalah, Christian Pentecostalism, and Tantric Hinduism, revealing that beneath the fixed exoterica lies a shared yearning to delve beneath the surface and experience unmediated connections to divine truth and communion. Many who subscribe to the exoteric orders of religions marginalize or disavow the esoteric threads that run alongside them, embarrassed by the ecstatic and supernatural antics of their adherents.

Modernity's collective esoterica has been maturing in the dark since its birth in the late 19th century and adolescence in the 1960s. Emerging from the shadows of the Industrial Revolution and the Age of Enlightenment, esotericism responded to the growing disillusionment with institutionalized religion and rational materialism. The late 19th century saw the rise of Theosophy, Spiritualism, and other movements that sought to reconcile science, philosophy, and ancient mystical traditions into comprehensive spiritual frameworks. These movements laid the groundwork for modern esoteric thought by drawing from Eastern religions and ancient Hermeticism.

In the 1960s, modern esotericism entered adolescence, propelled by the untamed energy of the counterculture movement. During this time, esoteric thought became infused with a spirit of experimentation and syncretism - the eclectic blending of elements from various religious traditions. Psychedelics, yoga, astrology, and meditation became gateways to altered states of consciousness, and ancient spiritual practices were viewed through new lenses.

Modernity's esoterica is now in its early twenties phase, sowing its wild oats with as many different cross-pollinating philosophies as possible. Today's esoteric traditions intersect in unprecedented ways, fueled by our unprecedented global connectivity. Online communities explore chaos magic, transpersonal psychology, and consciousness studies, imaginatively fusing them with ancient traditions. Yet, with this exploration comes a certain recklessness. Thoughtlessly interweaving disparate philosophies sometimes creates a new metaphysics that's less than the sum of its parts, with arbitrary admixtures producing incoherent, superficial syncretism

and warped sacred practices. Navigating modern esoterica's confusing landscape is a demoralizing gauntlet for many seekers because magical thinking is a precarious business. Both scientists and religious dogmatists are correct in being wary of those who stray from logic. The mystic's path is narrow, with cliffs of folly at every turn. One need only look into the surrounding canyons filled with credulous New Age catastrophes - traumatized cult members and hapless victims of spiritual grift - to see what devastation can be wrought by incoherent ontologies and the egos that wield them for their own manipulative benefit.

The subjectivity of spirituality is not alone in its capacity to wreak conceptual havoc, of course. In *Metaphors We Live By*, Lakoff and Johnson set up a dichotomy between subjectivity and objectivity, where the two interact with one another, mediated by the metaphorical prisms through which our experiences pass. Subjectivity leans on the role of personal experience, interpretation, and cultural context as it shapes what we view as knowledge and truth. Its lack of neutrality can be deleterious when applied to certain arenas, like scientific experimentation.

Objectivity is a modality in which knowledge and truth exist independently of individual perspectives and biases, which naturally lends itself well to the empirical focus required for effective science. Objectivity, however, comes with its own cost, which is why employing it as the only valid modality for thinking is a recipe for dehumanization:

Objectivity can be dangerous, because it misses what is most important and meaningful to individual people.

Objectivity can be unfair, since it must ignore the most

relevant realms of our experience in favor of the abstract, universal, and impersonal. For the same reason, objectivity can be inhuman. There are no objective and rational means for getting at our feelings, our aesthetic sensibilities, etc. Science is of no use when it comes to the most important things in our lives.

As far as my enchanted worldview is concerned, I continue to walk the path of a mystic because searching for the vital remainder left behind by science has frequently guided me to places of wonder and adventure. Along the way, I've found that the universe teems with metaphorical echoes, recursive motifs, and thematic rhymes that have beckoned me to where I am now. I wouldn't trade a day of the charmed life I've led as a result of indulging in subjective modalities of thinking. Just as the experience of love opens the human heart to deeper dimensionalities of experience, mysticism opens the whole being to additional dimensions of perception. Describing love to someone who's never directly experienced it is like describing a cube to a two-dimensional being, so the mystic can only describe their path with the affordances of mystical *experience*.

The mystic and the scientist both search for truth. We can look for it through telescopes and microscopes, or through strange altered states of consciousness, of which dreams are among the most powerful. A dream brought me into the orbit of mysticism at a young age, a dream pulled me back into that orbit during my season of materialist disenchantment in young adulthood, and a series of dreams about a colorful user interface inspired me to

write this book in middle age. As Kekulé said after describing his dream of the benzene ouroboros: “If we learn to dream, gentlemen, then we shall perhaps find truth.”

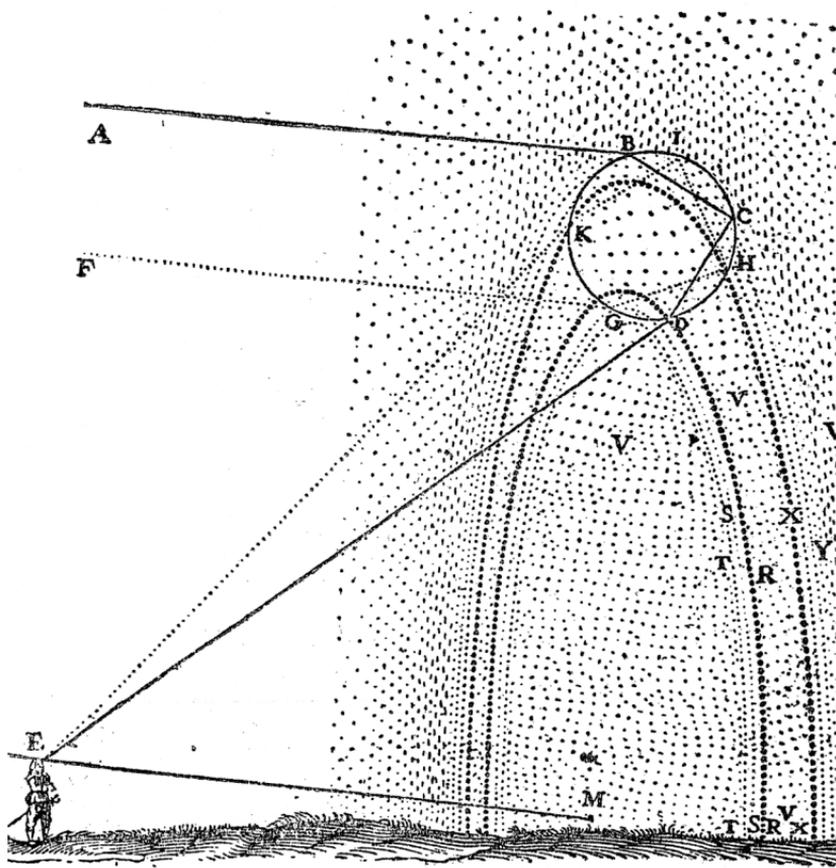
ANNULI



Music of the Spheres

The only member of the Greek pantheon to carry the caduceus, besides Hermes himself, was the goddess of rainbows, Iris. She was a celestial herald, traveling between heaven and earth using the rainbow as her path as she delivered messages between mortals and gods. Although they built no temples in Iris' honor, the Greeks immortalized her name in the iridescent, shimmering aperture of the eye.

Our eyes can perceive light with wavelengths between 380 and 700 nanometers. Variations within this range determine the colors we experience, with the longest wavelengths producing red and the shortest producing violet. Our eyes have red, green, and blue photoreceptive cones that work together to allow us to perceive the full spectrum of visible colors. Descartes included a section on the rainbow's spectrum in his 1637 work, *Discourse on Method*. His geometrical observations of light behavior within water droplets laid the foundation for understanding how rainbows form and how we observe them.



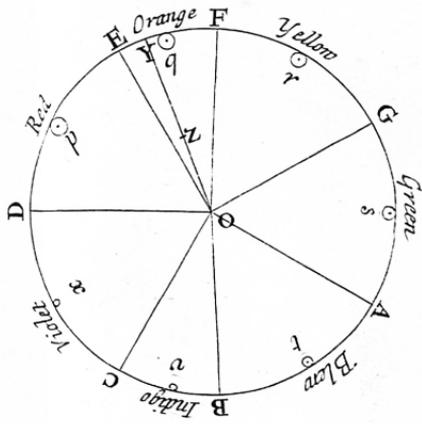
Descartes' sketch of how a rainbow forms

Descartes was able to determine why the rainbow is located where it is in relation to the sun's position, but he was stumped by the cause of the light's manifestation into bands of color. He also failed to identify that each color has a different refractive index, a shortcoming later rectified by our favorite alchemist, Sir Isaac Newton. In his 1704 work, *Opticks*, Newton demonstrated how

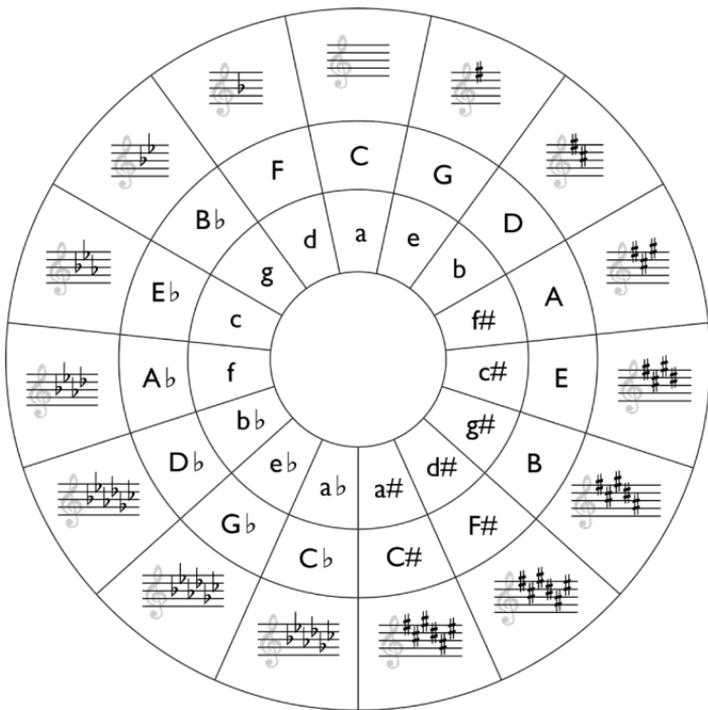
light splits into a spectrum of color when passed through a prism, and these components can be recombined to form white light again. He expanded on Descartes's work, measuring angles and indices of refraction for different materials and colors, establishing a more quantitative approach to optics.

The rainbow has been divided categorically into various numbers of colors by different cultures, often influenced by the affordances of those cultures' languages. Because the delineation from one color to the next isn't marked by sharp lines, but rather by a gradient, the number of colors we identify with the rainbow could've been arbitrarily decided by early optical scientists. Newton, however, did not arbitrarily subdivide the seven-color ROYGBIV spectrum. Indigo and orange, not typically identified with the rainbow then, were specified to ensure the number of spectral colors matched the seven notes of the Western musical scale. Inspired by mystical Pythagorean ideas about universal harmony, Newton saw the musical scale as a fractal echo of the fundamental divine principles of reality and, in choosing seven colors, sought to align the map with the territory.

Pythagoras and his followers were enamored with ratios, seeing them as mirrors of the principles that underwrite the cosmos. When he discovered that the pitch of a musical note is proportional to the length of the string that produces it, he suspected these ratios could be extended to the movements of celestial bodies. Pythagoras believed that the sun, moon, and planets move according to mathematical equations corresponding to musical intervals, with the movement of celestial bodies creating a kind of inaudible symphony - the Music of the Spheres, which encodes the seeds of reality.



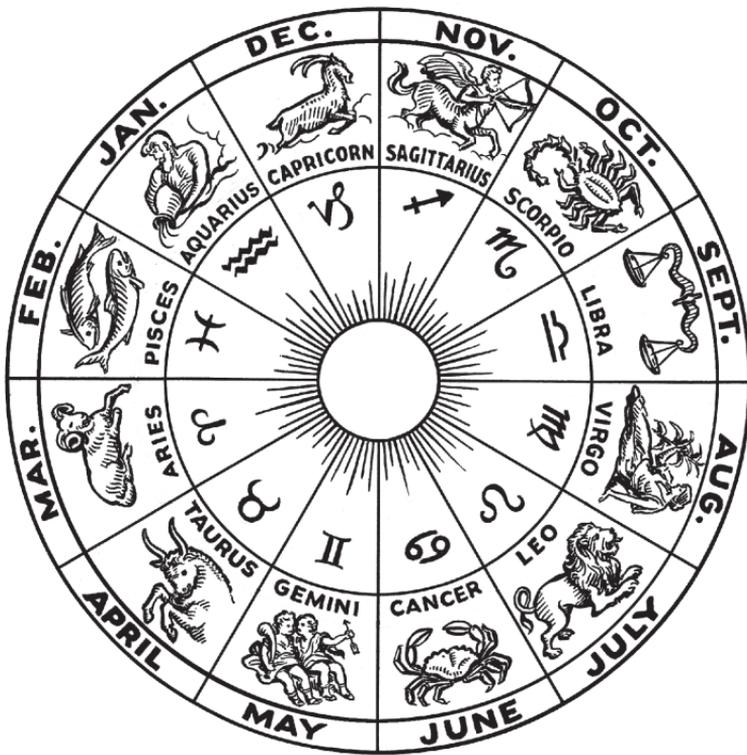
Newtonian mapping of the color spectrum to the musical scale



The Circle of Fifths

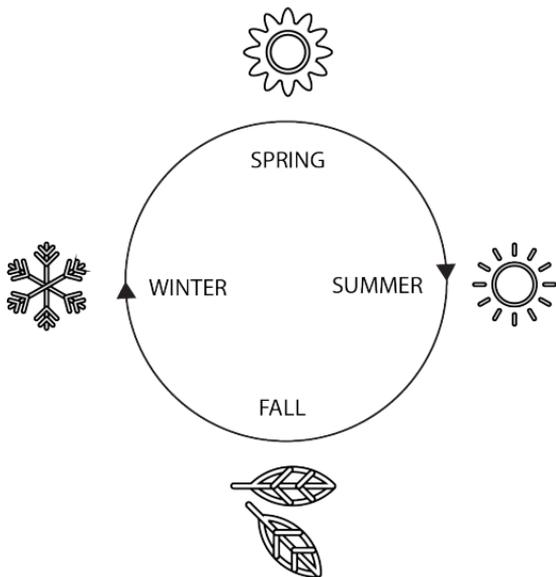
Newton mapped the spectral colors to the music scale in a circular diagram, a convention used to illustrate the harmony and interconnectedness of a conceptual system. The circle of fifths in music theory serves a similar purpose by showing the relationship between the twelve tones of the chromatic scale. Each note is a perfect fifth interval apart from its neighbors, illustrating the interconnection of keys and how they smoothly transition to one another.

The human eye contains a tendon that encircles the optic nerve as it enters the eye socket, providing stability and protection as it transmits information from the eye to the brain. This circular tendon is called the *annular tendon* or the *annulus of Zinn*. In mathematics, an annulus is also the region between two concentric circles. For these reasons, we'll borrow the word *annulus* to describe a wheel-like depiction of relationships in a conceptual system. While one could also represent the information in these annuli in a table, the circular structure provides a more effective affordance for grasping the non-hierarchical, holistic relationships between the elements. Western astrology's zodiac wheel is an annulus without conceptual artifacts associated with a hierarchical structure or a necessary linear progression. It also serves to represent the cyclical nature of the sun's journey over the course of a year. A table of correspondence format for the zodiac would obscure and fragment this nature, and the grid layout would downplay the harmonious balance within the cycle.

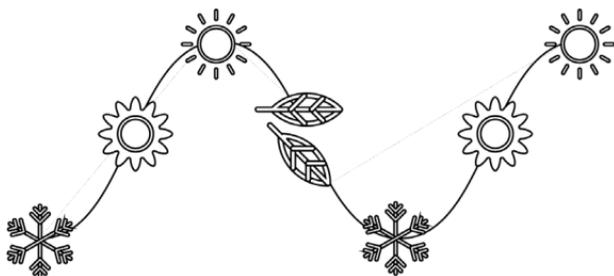


The Zodiac Wheel

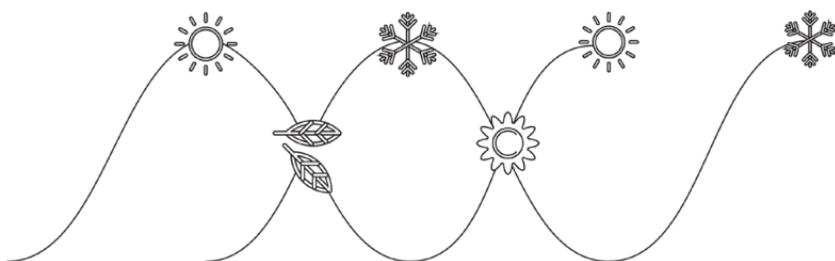
Let's turn the cube on the year's seasons and first view them through the prism of an annulus. The annular depiction shows us an eternal, timeless cycle with no clear beginning and no clear end, which does well at illustrating the holistic balance of the process, yet falls short of providing any qualitative differentiation between the elements within.



However, if we break the loop and stretch the line of the circle from left to right along an axis of time, it becomes a sine wave in which the seasons oscillate between the polarities of summer, with peaks and troughs of heat. Viewing the year through this prism reveals information about the qualities of the seasons, but obscures the eternality of the cycle in its introduction of a beginning and an end. The temporal element of the sine wave suggests a contingency to the process, as if some deficiency of energy or ecological will could flatten the wave and eliminate the polarity shifts.



We could also separate the polarities of summer and winter into two phase-inverted sine waves, which graph the waxing and waning of summer and winter as concurrent processes that intersect at fall (waning summer/waxing winter) and spring (waxing summer/waning winter).

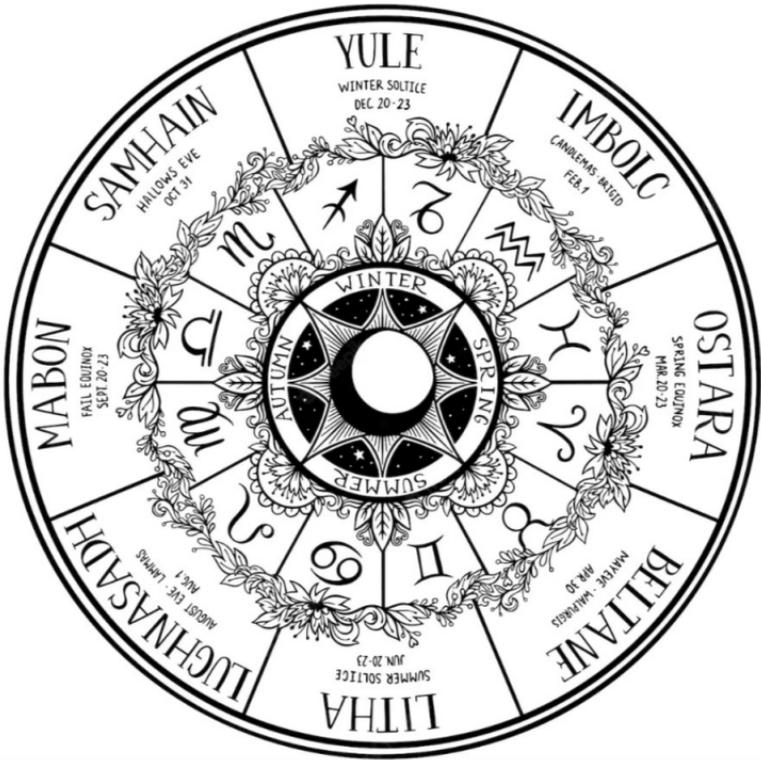


The helix illustration and the single sine wave depiction both marginalize fall and spring as secondary effects of the rise and collapse of summerness and winterness, rather than assigning them equal ontological status within a holistic cycle. The year then becomes a simple polarity shift, with colorful autumn leaves and mating rabbits as mere epiphenomena of this binary process. However, as a culture, we don't see fall and autumn as emergent by-products of the binary switching between heat and its absence because we apprehend autumn's falling leaves and spring's vibrant blossoming as tangible experiences worthy of discrete names and celebratory festivals. The lines we've drawn on our maps welcome these liminal seasons into the fold, as Newton welcomed orange and indigo into his spectrum.

In forsaking a linear prism for a cyclical one, the transitional and ephemeral comes into sharper focus. Just as linearity would depreciate spring and fall, so does it tend to depreciate spiritual experience, which is similarly ephemeral and conceptually elusive. Framing

is an exceptionally powerful cognitive device that can make the difference between what we consider real and unreal. If we remind ourselves that we are the ones who drew the lines on the map, then we might find it easier to appreciate frameworks that encompass those timeless, oblique facets of existence that have fascinated humanity since the earliest glimmers of history.

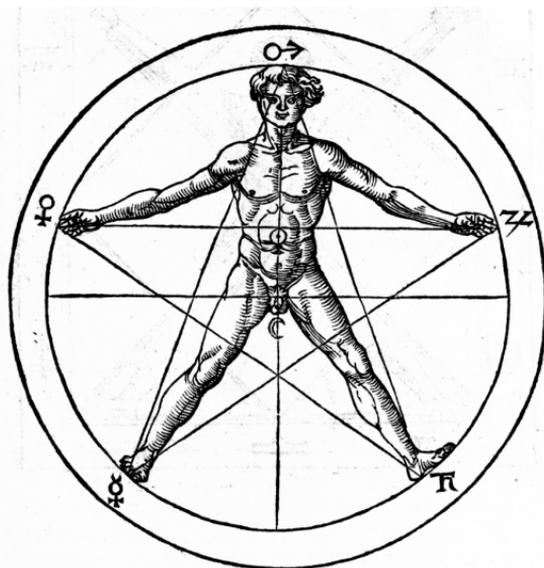
Magical grimoires are full of annuli that holistically depict the interplay of complex elements within esoteric systems. From the witches' Wheel of the Year to the magic circles of the Lesser Key of Solomon to the Tibetan Wheel of Life, these images represent the axes upon which mystical praxis hinges.



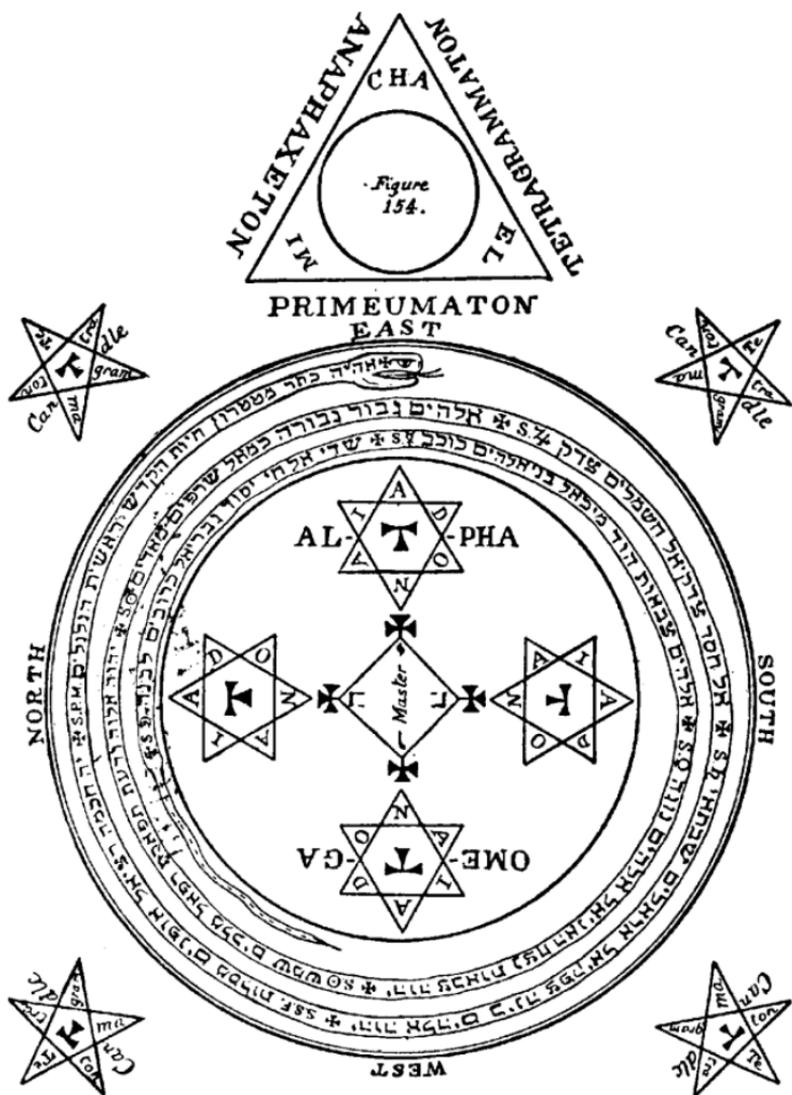
Wiccan Wheel of the Year, with witches' sabbats



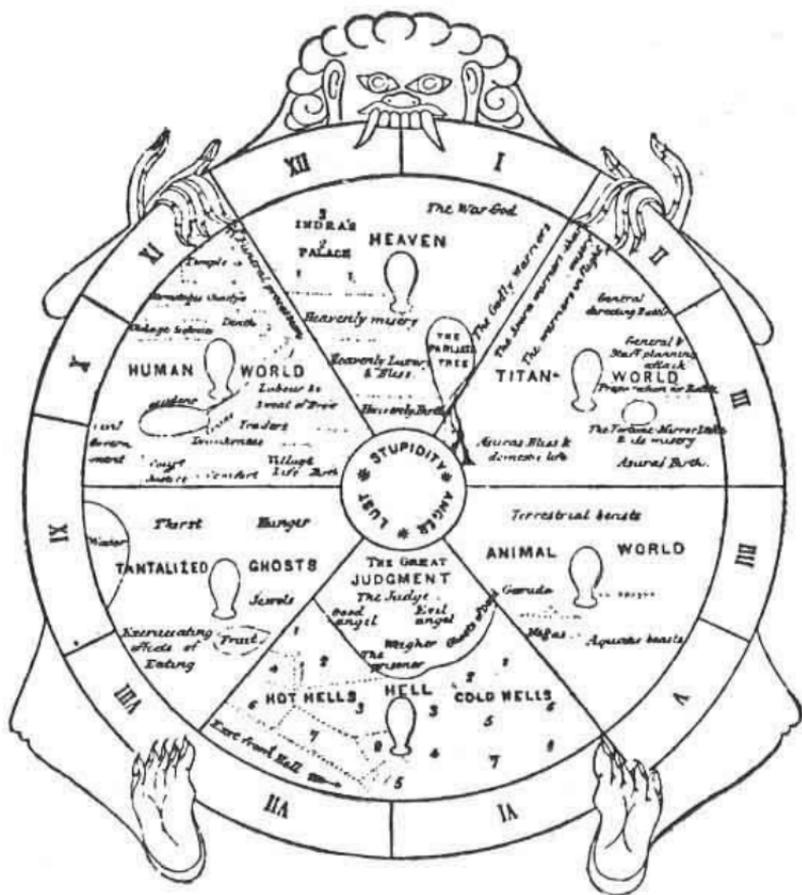
Magic circle from the 1565 grimoire *Heptameron* by Pietro d'Abano



Man inscribed in an astrological pentagram, from *Three Books of Occult Philosophy* by Heinrich Cornelius Agrippa, 1533



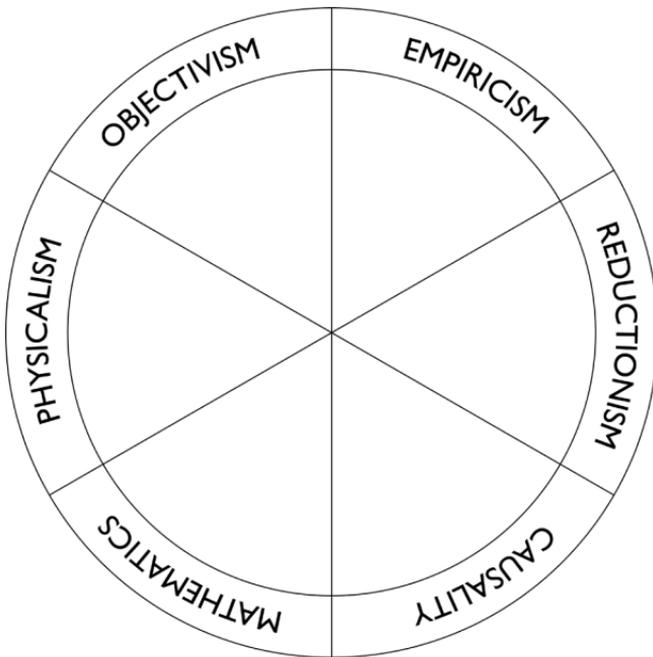
A magic circle from *The Lesser Key of Solomon*, a mid-17th century grimoire compiled from various sources



The Tibetan Wheel of Life

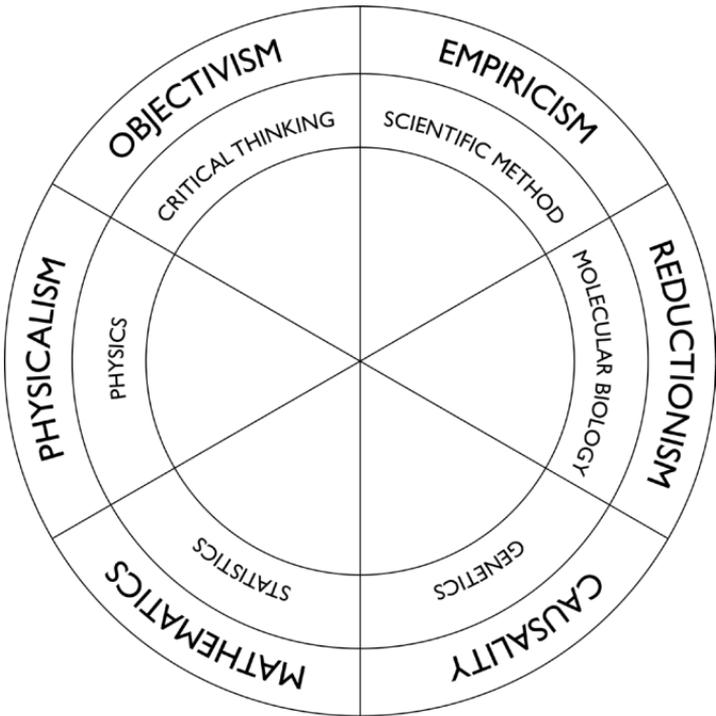
The Materialist Annulus

To demonstrate how we might build a new conceptual system, we'll first make a cursory attempt at mapping an existing framework to get a feel for how an annulus can encapsulate familiar ideas. Since we've frequently invoked the scientific materialist framework in this book, we'll use this opportunity to elucidate its fundamental values, starting with its first principles:



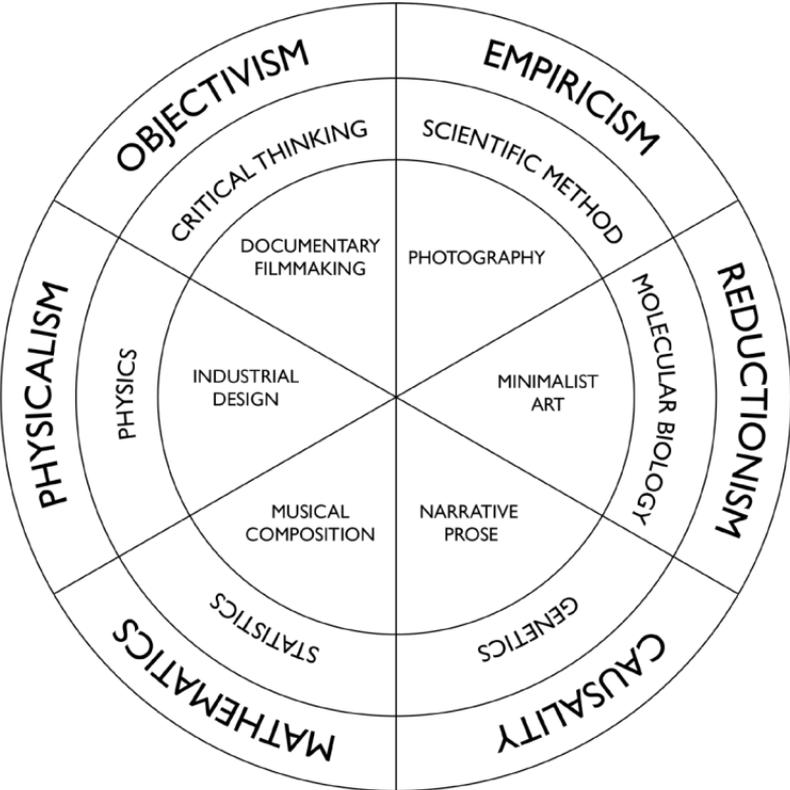
1. **Empiricism:** Knowledge comes from sensory experience and experimentation.
2. **Reductionism:** Complex phenomena can be understood by breaking them down into their simplest components.
3. **Causality:** Every event has a cause that can be (in theory) observed and measured.
4. **Mathematics:** The abstract science of number, quantity, and space, used to model and understand the physical world.
5. **Physicalism:** Everything that exists is physical and can be explained by physical laws.
6. **Objectivism:** All claims should be approached with doubt and questioned rigorously.

This set of six principles will form the outer ring of our Scientific Materialist Annulus, with its circumference representing the broadest abstractions of the system. From there, we move toward our first emanation of derived concepts that naturally follow the fundamental aspects:



1. From **Empiricism** we derive **The Scientific Method** as a process of inquiry and experimentation.
2. From **Reductionism** we derive **Molecular Biology** for understanding biological processes at a molecular level.
3. From **Causality** we derive **Genetics** for studying heredity, variation, and evolution to explain the variation in species.
4. From **Mathematics** we derive **Statistics** for dealing with data collection, analysis, interpretation, and presentation.
5. From **Physicalism** we derive **Physics** for studying matter, energy, and the fundamental forces of nature.
6. From **Objectivism** we derive **Critical Thinking** for skeptically analyzing issues to form unbiased judgements.

Next, let's project further inward to the affinities of these principles that exist in other fields, like the arts:

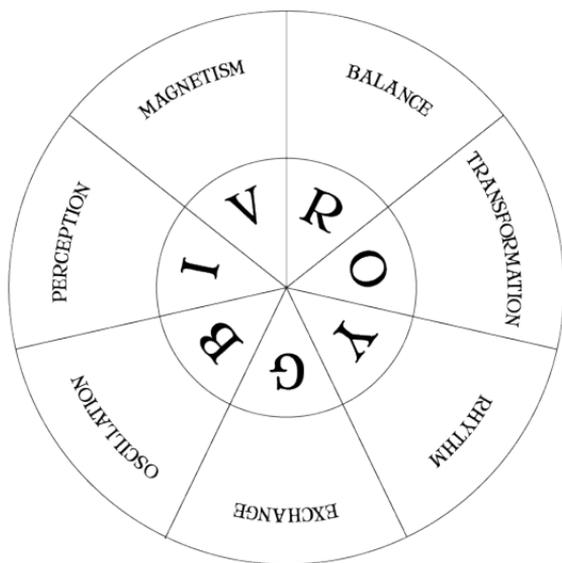


The Materialist Annulus

Behind the principle of correspondences lies the idea that these lines of affinity extend infinitely across all existence. In theory, we could trace the six fundamentals of materialism from first principles to types of desserts, articles of clothing, swear words, power tools, or poisonous plants. Deeper thinkers might improve upon this rudimentary annulus by adding additional first principles, removing conceptual overlap, or repositioning objects so that their spatial relationships within the circle provide extra layers of meaning and insight. But you get the idea. The intention behind a prototype isn't to implement it as a permanent fixture, but to use its affordances to tease out answers and solutions to the questions and problems that arise when people begin interacting with it. The flaws are the rungs of the ladder of discovery and discussion. Anyway, it's ideal that a model isn't seen as too perfect, lest it lead us to confuse the map for the territory.

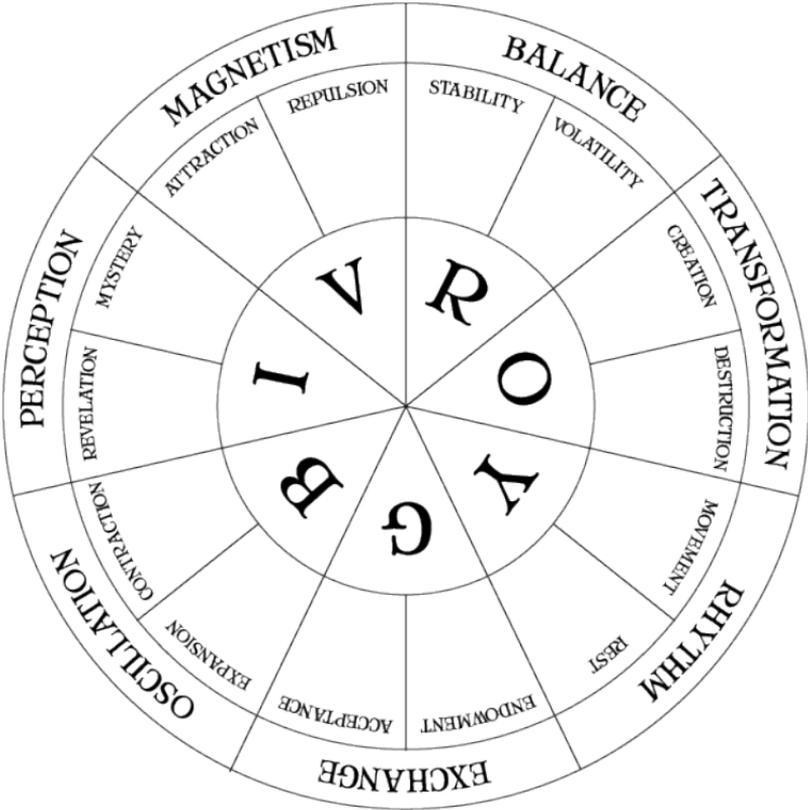
The Spectral Annulus

If the arrangement of astral bodies and the timing of their movements could serve as the basis of a complex metaphysical system like astrology, then what might be born out of the miraculous bridge of light that appears after a rain? Building upon Newton's color wheel, we can create an annulus that correlates the rainbow's colors to the core energies and principles of the universe. We'll divide *The Spectral Annulus* into seven colors, where each color is a category of being, representing a fundamental aspect of existence that encapsulates attributes, behaviors, and processes inherent in the natural and metaphysical world.



1. **Balance (Red):** Represents the dynamic equilibrium within and among all things. It's about the harmony and stability arising from the interaction of opposing forces, suggesting a state where different elements are in equal proportion or restful coexistence.
2. **Transformation (Orange):** Symbolizes change, growth, and the transition from one state to another. This hue captures the essence of evolution, metamorphosis, and the inevitable flow of time.
3. **Rhythm (Yellow):** Embodies the patterns and cycles that pervade the universe. This category speaks to the recurring motions and cycles that govern natural phenomena and human experiences from the atomic to the cosmic level.
4. **Exchange (Green):** Reflects interaction, reciprocity, and the flow of energy and resources between entities. This hue emphasizes the interdependence of all parts of the universe, highlighting the give-and-take nature of ecological and economic systems.
5. **Oscillation (Blue):** Denotes the fluctuations and variations that characterize much of existence. This can refer to the literal vibrations of sound and light waves or, more abstractly, to the swings in states, such as emotions and fortunes.
6. **Perception (Indigo):** Pertains to observation, understanding, and interpretation processes. This hue deals with how entities perceive their environments and themselves, encompassing all aspects of sensory experience, cognition, and awareness.
7. **Magnetism (Violet):** Concerns the forces of attraction and repulsion that act at all scales of reality. In a metaphysical sense, this refers to the intangible pulls and pushes that influence decisions, relationships, and life paths.

We'll reserve the two transcendent categories, Creation and Perception, for the two colors Newton introduced in his Pythagorean alignment schema, Orange and Indigo, respectively. These are the liminal spaces of The Annulus, communication ports to the next-highest level of reality through which another realm might interact with our own.



Further subdividing this wheel, we'll divide each aspect of existence into polarities representing dual forces or states that exist within every category.

1. Balance (Red): **Stability** and **Volatility**
2. Transformation (Orange): **Creation** and **Destruction**
3. Rhythm (Yellow): **Movement** and **Rest**
4. Exchange (Green): **Endowment** and **Acceptance**
5. Oscillation (Blue): **Expansion** and **Contraction**
6. Perception (Indigo): **Revelation** and **Mystery**
7. Magnetism (Violet): **Attraction** and **Repulsion**

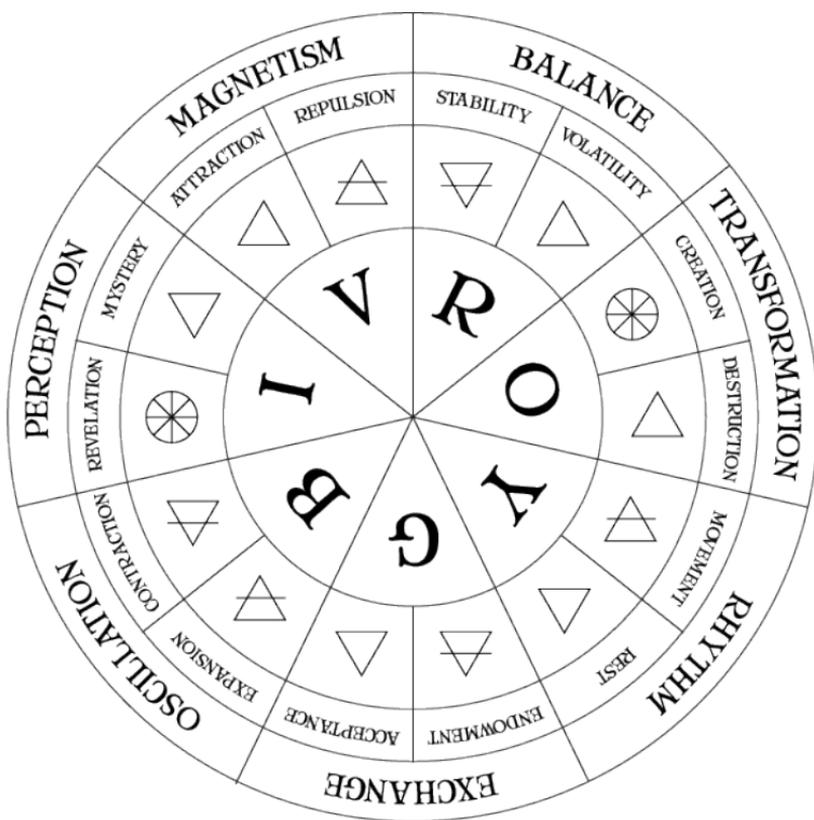
These polarities aren't static; instead, they dynamically oscillate, shift, and interact with each other. The perpetual shifting of polarities within and across the aspects drives the fundamental processes of the universe. We can visualize this interaction as a complex dance where each movement or change in one polarity can influence others, creating a cascading effect throughout the entire system. For example, in the aspect of Transformation, the polarity of Creation might spark new beginnings. At the same time, its counterpart, Destruction, clears away the old, making space for new forms and ideas to emerge. Similarly, in Rhythm, the polarity of Movement propels actions and changes, while Rest provides pauses, allowing systems to recharge and prepare for the next cycle. The engine of the universe, then, is powered by the tension between opposing forces - a dynamic equilibrium ensuring that the cosmos remains a living, evolving entity. Each polarity reversal involves complex interactions that maintain the universe's balance, drive its evolution, and create the panorama of phenomena we observe.

Let's apply The Spectral Annulus to something cosmic and elemental, like the activity of stars, to see all 14 polarities at work.

1. **Stability & Volatility:** A star exists in a state called hydrostatic equilibrium, wherein the extreme temperatures and pressures that drive fusion reactions in the star's core are held together by the force of gravity acting on the density of the core.
2. **Creation & Destruction:** Nuclear fusion creates new elements within a star, which are released into the interstellar medium when the star dies and self-destructs. These elements make the building blocks for cereal, tape, curtains, docks, lanterns, lockets, spurs, and our dear selves.
3. **Movement & Rest:** Convection occurs as heated plasma rises to the surface, cools, and then sinks back down to the core, creating a continuous cycle of movement and rest that transports energy and shapes the star's structure.
4. **Endowment & Acceptance:** Newly-formed protostars, as well as dying stars like neutron stars and white dwarfs, often feature an accretion disk—a ring of gas, plasma, dust, and other particles pulled into the intense gravity well of the star. These accretion disks are sites of intense gravitational and frictional forces, causing the material to heat up and emit light, heat, and high-energy particles into the cosmos.

5. **Expansion & Contraction:** Stars contract under gravity during their formation, expand into red giants as they exhaust their nuclear fuel, and depending on their initial mass, they may either shed their outer layers and contract into white dwarfs or, if massive enough, explode as supernovae and then contract into neutron stars or black holes.
6. **Revelation & Mystery:** Stars reveal themselves to our naked eyes by the light they emit to us in the visible spectrum. They also emit occult light in the infrared spectrum, which, when viewed with specialized instruments, reveals hidden aspects of stars, such as halos of cool dust and gas, and the detailed structure of star-forming regions, whose nature remains enigmatic to astrophysicists.
7. **Attraction & Repulsion:** The intense gravity of a star holds it together and, in some cases, creates a solar system, while radiation pressure and solar winds create a repulsive force, driving material away from the surface.

Next, we'll pay homage to the tradition of annuli within occult grimoires by incorporating an esoteric layer to *The Spectral Annulus*, correlating each of the fourteen polarities with one of the classical alchemical elements:



EARTH



Stability: As in roots and foundations, representing steadfastness and immovability.

Endowment: As in the provisions that spring from the soil, denoting nourishment and sustenance provided by the earth.

Contraction: As in compressed ground, symbolizing density, consolidation, and the drawing together of physical or metaphysical entities.

AIR



Movement: As in wind, embodying flow, change, and the directionality of forces.

Expansion: As in the spreading out or dilution of air, representing growth, enlargement, and increased scope or reach.

Repulsion: As in the scattering of leaves by a gust, illustrating dispersion, distancing, and the separation of elements.

FIRE



Volatility: As in the rapid combustion and intense transformation, which signifies sudden change, unpredictability, and dynamic shifts.

Destruction: As in the consuming flames, representing the breakdown, decomposition, and cessation of existing forms.

Attraction: As in the drawing together of particles towards heat, embodying allure and the compelling force of passion.

WATER



Rest: As in the stillness of a deep lake, representing calm, peace, and a pause in activity.

Acceptance: As in the accommodation of a river to its bed, signifying receptivity, adaptation to circumstances, and the assimilation of influences.

Mystery: As in the obscured depths of the ocean, denoting the unknown, the hidden, and the unfathomable aspects of existence.

SPIRIT



Creation: As in the breath of life, representing the genesis of new ideas, the spark of innovation, and the birth of forms.

Revelation: As in the illumination of truth, symbolizing enlightenment, the uncovering of hidden knowledge, and the realization of esoteric understanding.

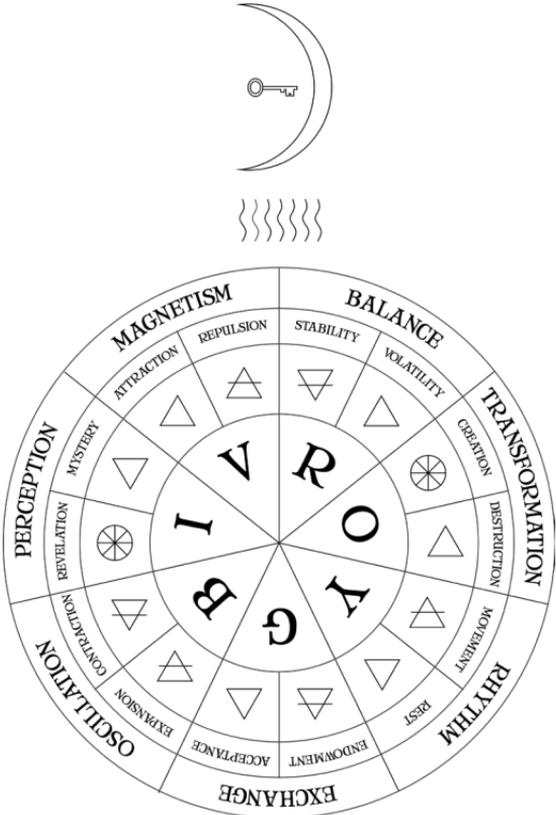
The Spectral Annulus can serve as a high-level metaphysical model of the interconnectivity and flux of the natural world. We can expand its correspondences to map other principles, phenomena, objects, or concepts, and we can further subdivide its aspects into more nuanced categories. Its ontological resolution can be upscaled or downscaled depending on the focal length required by the situation to which it's applied. Below are the polarities of The Spectral Annulus represented as a table of correspondences, with a new column that maps them to the various processes of alchemy. We can now see a clear through-line of energies and principles start to emerge:

| POLARITY | COLOR | ELEMENT | ALCHEMICAL PROCESS | STELLAR ACTIVITY |
|-------------|--------|---------|--------------------|------------------|
| Stability | Red | Earth | Fixation | Equilibrium |
| Volatility | Red | Fire | Volatilization | Collapse |
| Creation | Orange | Spirit | Synthesis | Fusion |
| Destruction | Orange | Fire | Combustion | Supernova |
| Movement | Yellow | Air | Circulation | Convection |
| Rest | Yellow | Water | Cementation | Convection |
| Endowment | Green | Earth | Secretion | Radiation |
| Acceptance | Green | Water | Absorption | Accretion |
| Expansion | Blue | Air | Dissolution | Expansion |
| Contraction | Blue | Earth | Coagulation | Contraction |
| Revelation | Indigo | Spirit | Distillation | Light |
| Mystery | Indigo | Water | Adulteration | Infrared |
| Attraction | Violet | Fire | Amalgamation | Gravitation |
| Repulsion | Violet | Air | Separation | Ejection |

The idea that this method can act as a lens for apprehending anything in the universe and mapping it back to the fundamental polarities is partially inspired by Neoplatonic thought. Neoplatonism, with its central tenet of emanation from a single, ineffable Source (The One), sees all of existence as a cascade

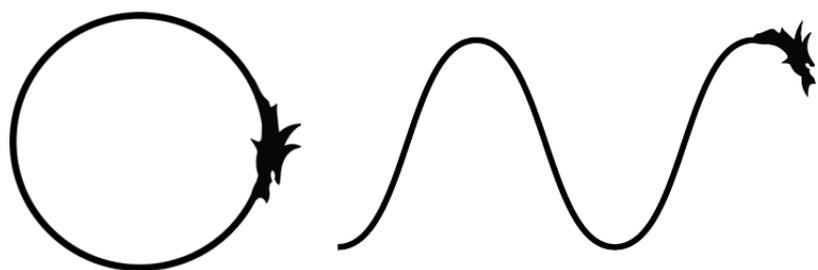
from the purely divine to the materially manifest. Similarly, Emanationism posits that all forms of reality emanate from the ultimate, unknowable divine essence through successive stages of increasing materiality and decreasing divinity.

On the cover of this book, I rendered what I call the Indigo Moon to indicate the impenetrable mystery of the ineffable Source. The seven curved lines beneath the Indigo Moon represent the refraction of The One into aspects of itself, as Newton’s white light refracts into color when passed through his prism.



Note that by combining the elemental symbols for water (Mystery) and spirit (Revelation), we can form a symbol that resembles a keyhole.

The Perception slice of the annulus is where I derived the concept of **The Indigo**. Due to its liminal status, it contains one of the chart's two correlations to the spirit element. When we deal with the polarities of Perception, we operate in the realm of consciousness, which in this metaphysical framework is non-local to the material world, yet interacts with it through Revelation and Mystery. **The Indigo** is my imaginal structure. I see it as a cube-shaped temple floating in a black void. Eternally circumnavigating the outer perimeter of the temple in serpentine flight is the Time Dragon, an avatar for the ego, and a reminder of the verboten profanity of the mundane, which may not enter. This astral temple, this *mundus imaginalis*, is a place where every object within is an object of power. On display throughout are tangible artifacts of my most profound dreams. The walls are lined with shelves of books that glow and provide the temple's light. The poetry of life emanates from here. In **The Indigo**, I look with soft eyes. I touch with mellow hands. When I leave, I mount the Time Dragon and ride with sorrow back to the river of reason and ego and tautness and habit.



The Time Dragon an eternal ouroboros (left) and a sine wave of time (right)

Just as the indigo Perception slice is a portal between worlds, the orange Transformation slice is a liminal facet that deals with the act of manifestation in its Creation polarity. Creation, in this sense, has a dual meaning that refers to the act of creation within the material world and the manifestation of matter itself from the metaphysical. These two transcendent colors flank The Spectral Annulus as opposing, symmetrically positioned wedges that support its cosmological structure.

*

One can find many Neoplatonic analogs in the creation myths and cosmologies of early Judeo-Christian mystic sects, which are loosely referred to as Gnostics. While Gnosticism is a broad term that encompasses a wide spectrum of different beliefs, I'll outline the general ideas that permeate its variations.

Its Emanationist cosmology starts with the Pleroma, or the divine realm. This is the ethereal dwelling place of *The One* (which the Gnostics call *The Monad*) and a group of subordinate celestial beings called *Aeons*, which emanated from The Monad. The Aeons vary in number according to the flavor of Gnostic tradition, but they always come in pairs called *syzygies* that represent masculine and feminine aspects of The Monad. We can think of The Monad as our beam of white light and the Aeons as the colors into which it refracts.

Of all the Aeon syzygies, Sophia and Logos are the most significant. By way of a mishap, Sophia is responsible for creating the universe in which human beings dwell. Aeons are allowed to create by emanating other celestial beings, which then appear in lower realms in the cosmic hierarchy. They do this by pairing with

their syzygy counterparts to maintain a balance of masculine and feminine energies in their creations.

Sophia, however, tried to emanate a being on her own, without the partnership of Logos, and in doing so, created an unstable being called *the Demiurge*, aka *Yaldabaoth*. The Demiurge believed it was The One, the supreme being, and thus emanated its own set of subordinate beings called *Archons* that helped it construct a physical universe, which Gnostic traditions often frame as a corrupted echo of the cosmic realm. It's a story of a fall from grace, with incarnation in our realm as a state of imprisonment from which our souls require salvation, echoing the Neoplatonic concept of increasing materiality corresponding with decreasing divinity.

We might compare the process to the duplication of a VHS copy of the pilot episode of David Lynch's television series, *Twin Peaks*. Our first-generation copy creates minor imperfections, with some distortion in Laura Palmer's hair and reduced sharpness of Dale Cooper's chin. As we continue to copy it again and again, the successive generations degrade further, leading to blurry red curtains, muffled lounge music, and jittery dance moves by the Man from Another Place. After a few generations, we can barely recognize the RR Diner when it appears in establishing shots.

So, too, does each cosmic emanation lose a degree of its original purity and truth. The Demiurge is an imperfect, distorted copy of the essence of Sophia. The Archons it emanates are even further removed from Sophia's divine nature, and the world they build becomes a mere shadow of the Pleroma. Our world has a much

lower ontological resolution than the divine realms that precede it in the cosmic hierarchy. The nature of existence at our level is filled with glitches called entropy and decay, and all that's left of Sophia is a minute spark that exists in all human souls, smuggled into our reality through the fruit of the Tree of Knowledge.

Alchemy mirrors this uncovering of the divine spark through a process that ends with distillation. If you'll remember, distillation reveals the *quinta essentia* or the fifth element of spirit (as in, the divine spirit-spark of Sophia). Only by employing the stages of the alchemical process can we refine and purify the human soul, unleashing its imprisoned divinity. Jung intuitively understood this when developing his alchemical idea of individuation.

Let's continue our journey, placing The Spectral Annulus in the alembic with magical thought to see what new notions we can synthesize in the process. In other words - *solve et coagula*.

Spectral Magic

It is my personal opinion that in the science of the future, reality will neither be 'psychic' nor 'physical' but somehow both and somehow neither.

- Wolfgang Pauli

I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.

- Max Planck

Max Planck is the progenitor of the field of quantum physics, and he's known for fundamental concepts in quantum theory like the Planck constant and Planck units. Les you suspect his quote about consciousness was somehow taken out of context or a random thought that he later corrected, the following is from a lecture Planck gave more than a decade later:

As a man who has devoted his whole life to the most clear headed science, to the study of matter, I can tell you that there is no matter as such due to my research about atoms. All matter originates and exists only by virtue of a force that brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent mind. This mind is the matrix of all matter.

Embedded in this idealist model is the idea that the brain is not the source of consciousness, but a filter, receiver, or material echo of consciousness. Aldous Huxley intuitively touched on this idea in his 1954 account of a mescaline trip, *The Doors of Perception*. Huxley's reflections on his psychedelic encounter included his suspicion that the brain was a "reducing valve" for consciousness, funneling down an expansive mind that exists outside of space and time into a minimal mental fragment that's the human being's normal state of time-bound awareness. The idea is typically referred to in modern science as *non-local consciousness*.

While cognitive scientists have mapped the physical neural correlates of the brain to various states of consciousness, the may not be the *cause* of the latter. Imagine the complexity of the physical brain, with its 100 trillion connections, as a manifestation

of intersections of pure, disembodied ideas in a non-local metaphysical realm at a higher level of reality. The brain may be what the experience of consciousness looks like when viewed through our lower, material prism. The neural correlates may exist because a correlation exists between consciousness and matter. The brain would then be an icon representing extremely complex metaphysical processes beyond the purview of our desktop interface. And while intoxication, pathologies, deformities, or injuries may affect the manifestation of consciousness, it does not impact consciousness *per se*.

Let's imagine the sun, a window, and a sunbeam inside a bedroom. The sun is pure consciousness, the windows is the physical brain, and the beam of light is the manifestations of consciousness - personality, intelligence, and qualia. Over time, cracks and warps form in the window, and they affect the beam of light in the bedroom, as changes in the physical brain affect qualia and personality. And even before the light reaches the window, cloud formations may diffuse it, changing its tint and luminosity. But no matter how many cracks, bubbles and sags form in the window, the light of consciousness outside remains unchanged. When the window breaks, the sunbeam doesn't vanish. It simply becomes pure, unfiltered sunlight.

It's from this consciousness-first perspective that we can conceptually transcend the limitations of materiality and causality. Idealism maintains coherence while providing a substrate upon which the realm of thought can seamlessly interact with the realm of matter. This is the model that allows magic to gain a foothold, providing a conceptual pathway for ideas within the metaphysical realm to flow down into material, causal reality. And we once

again arrive at the linchpin maxim upon which all Western mystical thought rests: *As above, so below*.

*

In Einsteinian physics, gravity works because space and time act as a stretchable fabric. When a heavy object, like a planet or star, sits on this fabric, it makes a dent or a warp. This warp causes other objects to slide across the fabric toward the heavy object, as a marble would roll toward a bowling ball placed on a trampoline. Gravity is just the effect of this warping of spacetime around massive objects.

Let us then do a bit of conceptual icon-swapping. In the last sentence of the previous paragraph, replace spacetime with consciousness, replace mass with meaning, and replace gravity with synchronicity. Synchronicity is just the effect of warping consciousness around meaningful events. When meaning increases—when something is laden with emotional weight or personal significance—it warps the canvas of consciousness just as mass bends spacetime. It helps create the conditions for synchronicity - events with similar meanings falling together in space and time.

A magician attracts a reality that corresponds or conceptually rhymes with their intention, not through direct causation, but through a principle of attraction in a metaphysical realm outside of space and time, which manifests as acausal connection in the spacetime realm. Magical results could be understood as creating an intentional gravity well of synchronicity within the universal substrate of consciousness, which is bound up with spacetime via a principle of correspondence between the two realms.

$$M = S(\int(C \cdot dI))^{\mu}$$

M = Manifestation

S = Synchronicity

C = Consciousness

\int = Cumulative Integral

dI = Differential of Intention

μ = Measure of Meaning

In English, manifestation results from synchronicity, which is applied to the accumulated effect of consciousness interacting with the differential of intention, amplified by the measure of meaning.

How might this play out in a magical working? Let's say a magician wants to advance their musical career and become a well-known artist. They work hard at their craft, but they augment their clearly-defined intentions by performing a magical working infused with strong personal meaning and emotional significance. During the ritual, they visualize a symbol of their success glowing and warping the fabric of reality. They imagine it's a gravity well that attracts opportunities related to their career advancement. The magician ritually releases their intention into the universe, trusting that synchronicities will align to bring about the desired outcome.

Unbeknownst to the magician, several years ago, a record executive attended an obscure music festival where they discovered a niche musical genre that intrigued them. They made a mental note to look for promising artists in this genre, but didn't actively pursue it. Shortly after the magical working, the executive makes a type-o while performing a web search for something unrelated, and stumbles upon a playlist of artists in this niche genre. They discover the magician's music, and offer to represent them. The magician secures a record deal, leading to increased recognition and career advancement.

Thinking causally, there are two lines of deterministic dominoes that fell over as physics would predict. The first domino that the magician pushed over was their first practice session. The first domino the record exec pushed over was hearing an intriguing new genre of music. The two streams were placed in the same ballpark, so they randomly crossed over at one point, creating the

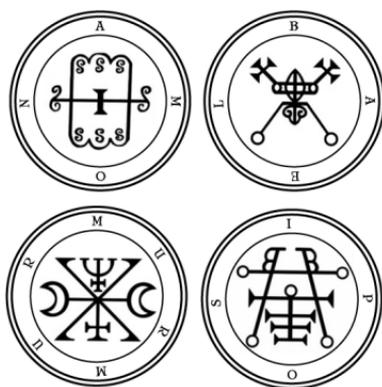
opportunity. Since the exec's first domino was pushed over years before the magician started practicing their music, the two can't be causally related. Their intersection is coincidence.

Thinking acausally, the timing is irrelevant. Atemporal metaphysical forces (meaning, intention) can act upon a block universe in non-simultaneous ways. It's like the five fingers of a three-dimensional hand passing through a two-dimensional piece of paper. From the paper's point of view, all that exists are five separate flat lines that suddenly become a long single line as the palm passes through. There's no way for the two-dimensional observers to conceptualize a three-dimensional object, so they misunderstand what they're seeing. They aren't taking into account the possibility of an extra dimension of space acting upon their plane. So it is with an atemporal metaphysical realm interacting with a temporal material realm. Events fall together in both space and time, regardless of the path of their chain of causality.

While a magician initiates ritual actions and adds weight to intentions through carefully chosen words, symbols, and gestures, a collaborative element with the cosmos consistently crafts the final outcome. The magician calls and then remains open and receptive to the poetic ways that reality responds.

*

Medieval sorcerers seeking to affect reality through magic often employed icons that launched various programs of intention. They called these icons sigils (from the Latin *sigilla*, meaning "seal").



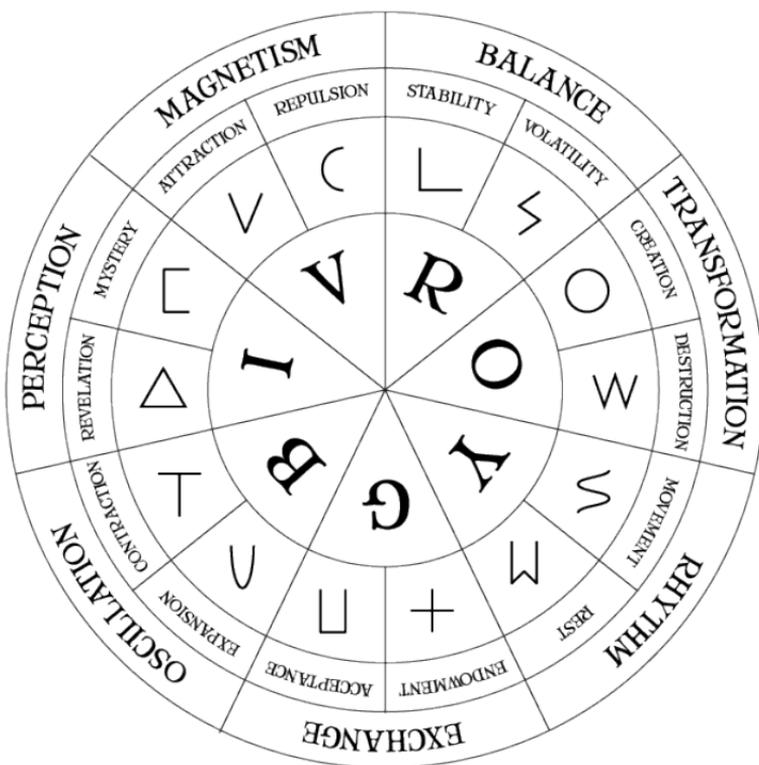
Four sigils from *Lemegeton Clavicula Salomonis*

A sigil represents a magician's desire or goal, crafted into a uniquely abstract glyph. Like any icon, it has no inherent power on its own. A sigil is a surface-level object connected to a lower-level program of intention. It has to be activated (double-clicked) to launch its embedded intention within the conscious substrate of reality's operating system.

Traditionally, a sigil is created by fashioning a statement of intent—a desire for protection, love, success, or any other aspiration—into an abstract design. This process often involves condensing letters and elements of the statement into a singular, cohesive glyph charged with energy through various rituals. Once activated, the sigil is meant to create a subtle indentation in the trampoline of consciousness that leads events acausally towards the desired outcome.

Chaos magic, a relatively modern strand of occult practice, embraces sigils with particular enthusiasm. It emerged in the late 20th century as a response to the rigorous structures of older magical traditions, and is built on the theory that belief itself is an active magical tool; what matters is not the dogma or the traditional lineage of the symbols but rather the magician's belief in their effectiveness and ability to produce tangible manifestations. In chaos magic, working with sigils is a quick and efficient means to alter reality. Practitioners create sigils by rearranging the letters of a wish or statement of intent, removing duplicate letters and vowels, and artistically merging the remaining consonant characters into a single graphic. This image is then charged through a ritual, often involving a state of gnosis achieved via meditation, dance, chanting, or other methods that harness intense emotional and psychological energy.

In place of this letter substitution method, let's use a process by which the magician's intention can be mapped to two or more polarities of The Spectral Annulus, tracing the intention to its most elemental constituents. Each polarity, from Stability to Revelation, is associated with a specific glyph. When these glyphs are combined, they form complex sigils that represent the practitioner's intention in alignment with the principalities of annulus, thus creating a symbolic language for navigating and influencing reality using its most fundamental affordances. Let's craft a sigil that represents a common desire for many adults - getting some peace and quiet around the house.



A person seeking to map their idea of quiet to an annular polarity will almost invariably choose Rest, its most apparent analog. To add another layer of specificity—where we wish to invoke this spirit of Rest, the house—we can connect to the polarity that aligns best with the quintessential spirit of domestic life: Stability. This conjunction of the polarities Rest and Stability provides us with two basic shapes to form our sigil.



From here, we exercise our own discretion to combine these fundamental elements in any desired manner. If we prefer balance and symmetry in our sigils, we can rotate and overlay them to form a new shape.



We then shorten a couple of lines and terminate all “open” lines with small circles. Finally, we enclose the design in a circle to sanctify our magical icon and symbolically separate it from the mundane world. This act mirrors the age-old magical practice of drawing a protective circle around oneself before performing a ritual, a method magicians use to demarcate a sacred space where ordinary rules of reality no longer apply. This boundary not only shields us from external influences but also focuses the intention and sets the stage for its activation in the ritual to come.



The scope of this book doesn't extend to a comprehensive overview of magical theory and practice. The field of magic is immense, encompassing a dizzying array of frameworks, sacred phrases, symbols, and implements such as wands, cups, daggers, and pentacles, each with its unique method for constructing rituals. However, understanding the need for a practical approach

to activating our sigil, I'll provide some basic guidelines for those new to magical practices.

First and foremost, it's essential to grasp the distinction between the sacred and the profane. The delineation between the two serves as a cornerstone of effective magical work. In magic, the sacred space is where transformation and invocation occur; it is a realm set apart from ordinary life, where the energies interacted with are of a nature and power intensified by their proximity to Source. By understanding this separation, practitioners can more effectively harness the potential of their rituals and ensure that their interactions with these forces remain respectful and psychologically safe.

Historian of religion Mircea Eliade is well known for his theory of *hierophanies*, which form the basis for mystical and religious experience. In his 1957 book, *The Sacred and the Profane: The Nature of Religion*, Eliade outlines sacred space's role in establishing orientation in these workings. The circle motif establishes an *axis mundi* (center of the world), recurs in our sigil craft, and affords us a physical space to perform rituals.

Revelation of a sacred space makes it possible to obtain a fixed point and hence to acquire orientation in the chaos of homogeneity, to “found the world” and to live in a real sense. The profane experience, on the contrary, maintains the homogeneity and hence the relativity of space. No true orientation is now possible, for the fixed point no longer enjoys a unique ontological status; it appears and disappears in accordance with the needs of the day. Properly speaking, there is no longer any world, there are only fragments of a shattered universe, an amorphous mass consisting of an

infinite number of more or less neutral places in which man moves, governed and driven by the obligations of an existence incorporated into an industrial society.

Yet this experience of profane space still includes values that to some extent recall the nonhomogeneity peculiar to the religious experience of space. There are, for example, privileged places, qualitatively different from others - a man's birthplace, or the scenes of his first love, or certain places in the first foreign city he visited in youth. Even for the most frankly nonreligious man, all these places still retain an exceptional, a unique quality; they are the "holy places" of his private universe, as if it were in such spots that he had received the revelation of a reality other than that in which he participates through his ordinary life.

In drawing a circle around a sigil, the magician sanctifies it, separating it from non-magical (profane) markings. The motif continues in the practice of the *magic circle*, a space drawn around a magician that forms a micro-cosmos of sacred space within which their ritual is performed. The circle can be physically drawn (with chalk or salt, often) or conceptually drawn with gestures. This act creates subdivisions of both space and time, and the period following the closure of the circle becomes sanctified by the act, ending when the ritual has concluded and the circle is broken.

An object can also be sanctified by simply placing it in a sacred context. This requires the removal of the object from all profane usage. For example, a pen used to draw sigils would be set aside for use exclusively in magical workings. The magician might select a pen with some special meaning (i.e., belonged to a loved one or was acquired in some special place) or purchase a new pen that is

immediately segregated from other pens and never once applied to any profane, utilitarian, or industrial use.

Similarly to physical segregation, the choice of language in which rituals and spells are articulated can significantly enhance their potency. Languages no longer in everyday use—or those explicitly created for esoteric purposes—serve as excellent candidates for magical languages. By using words distinct from one's daily vocabulary, practitioners can transfer language into a decidedly sacred realm, untouched by the mundane uses of everyday speech.

We'll use Esperanto as our magical language. Although Esperanto is a constructed language designed for universal communication, its rarity in daily discourse makes it ideal for magical use. The language becomes a tool, set aside and preserved solely for engaging with a different modality of experience, much like a ritual dagger or chalice kept solely for ceremonial usage. One could just as easily use invented languages like Klingon, Elvish, or Dothraki.

In ritual design, our aesthetic choices aren't merely ornamental but serve as portals to deeper, archetypal realms. This is where the concept of numinosity becomes pivotal. Numinosity refers to the presence or invocation of a profound, often awe-inspiring mystery—what Rudolf Otto described in his seminal work, *The Idea of the Holy* as the *mysterium tremendum*. This tremendous mystery evokes a mix of horror and fascination; the eerie and majestic essence makes the divine simultaneously terrifying and alluring. Otto, an early 20th-century scholar of religions, proposed that encounters with the numinous involve a “wholly other” experience—an encounter with something so beyond the ordinary that it's both fearsome and fascinating. This element

is crucial in rituals because it helps transmute the mundane into the sacred, instilling a sense of awe essential for a magical experience. According to Otto, "The numinous is that in the object which excites the emotion of the sublime, the awe-inspiring, the mysterium that is at once terrifying (*tremendum*) and fascinating (*fascinans*)."

The concept of the numinous is echoed in various religious and mystical traditions, with Christianity using particularly striking imagery to evoke this profound sense of mystery and awe. In the Christian tradition, angels are often depicted as overwhelming presences that inspire fear and wonder in equal measure. These biblical messengers are so awe-inspiring that their first reassurance to those they visit is usually, "Be not afraid", underscoring the intense and unsettling aura that genuine encounters with the divine can provoke.

The Bible describes angels in terms that are far from human-like figures with simple halos and wings; instead, they're presented as complex and often terrifying beings. *The Book of Ezekiel* describes cherubim as having multiple faces — that of a man, a lion, an ox, and an eagle — and their bodies, hands, and wings full of eyes all around. This affect is also harnessed in the design of ominous Gothic cathedrals. These looming structures are often lined with grotesque gargoyles perched high on the facades, reminders of the chaos and evil from which the sacred space of the cathedral provides refuge. The soaring, vaulted ceilings and the play of light through stained glass windows create an otherworldly atmosphere that unsettles as it uplifts.

In Hinduism, the portrayal of Krishna typically embodies beauty and sublimity, often depicted as a charismatic youth with a flute or as a divine lover. This, however, is merely the

icon that Krishna presents to humanity, an accessible form that draws devotees closer, emphasizing Krishna's aspects of love, joy, and cosmic playfulness. Beneath this serene icon lies a deeper reality that captures the essence of the numinous in its most intense form.

During a pivotal moment in the *Bhagavad Gita*, Krishna grants Arjuna the ability to see his *Vishvarupa* (universal form), a stark departure from his customarily rendered icon. This form is a terrifying spectacle, containing countless faces and eyes, extending into infinity, engulfing all space and time, radiating intense light, and exhibiting divine power that both mesmerizes and terrifies. Arjuna, witnessing this, experiences an overwhelming mix of awe, fear, and bewilderment, reflecting the classic “fear and trembling” response to the numinous.

Hence, the tendency of occultists to employ spooky, otherworldly imagery, chant in dead languages, and stock their curio cabinets full of skulls and other macabre objects. All this strange paraphernalia facilitates a connection to a state of wonder, power, and awe mixed with a bit of horror. It's not meant to attract demons and evil spirits, but to evoke the numinous.

Storing magical items in a dedicated cabinet, box, or other container is a simple method for disconnecting them from normal context. It's but one of many potential layers of consecration for a physical object. A magician might “charge” the object with additional layers of meaning and consecration by:

- Leaving it outside to bask in the light of a rare moon or planetary alignment
- Burying it for some time in a meaningful or hard-to-access location
- Holding it or gazing at it while intensely meditating
- Placing it in a bag with specific herbs or crystals
- Bathing it in the smoke of a sage stick

In the example of the rare moonlight, note that the charging power doesn't lie in some occult attribute of the light itself but in the event's rarity. The quest for exceedingly rare or difficult-to-obtain things to use in magical workings is a longstanding trope of occult grimoires that can push this difficulty level to comical levels. I particularly enjoy reading the elaborate instructions for creating and consecrating magical items in books like *The Key of Solomon the King* by S.L. MacGregor Mathers, in which interminable lists of arduous steps are prescribed for crafting various magical implements.

In order to properly carry out the greatest and most important Operations of the Art, various Instruments are necessary, as a Knife with a white hilt, another with a black hilt, a short Lance, wherewith to trace Circles, Characters, and other things. The Knife with the white hilt should be made in the day and hour of Mercury, when Mars is in the Sign of the Ram or of the Scorpion. It should be dipped in the blood of a gosling and in the juice of the pimpernel, the Moon being at her full or increasing in light.

Later, Mathers provides some instructions on crafting the magician's staff and wand:

The Staff should be of elderwood, or cane, or rosewood; and the Wand of hazel or nut tree, in all cases the wood being virgin, that is of one year's growth only. They should each be cut from the tree at a single stroke, on the day of Mercury, at sunrise. The characters shown should be written or engraved thereon in the day and hour of Mercury.

While the sentiment behind these elaborate requirements is admirable, the orders are so prohibitively tall as to, by design, no doubt, provide a barrier to entry for the dilettante magician. The detailed rituals, precise astrological timings, and specific material requirements create an aura of exclusivity and seriousness around traditional ceremonial magic. It's intended to test the dedication and discipline of the practitioner, ensuring that only those with genuine commitment and perseverance can partake in the mysteries.

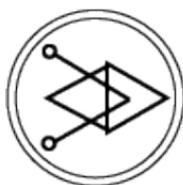
However, I have a soft spot for dilettante magicians, and therefore lean toward the more flexible and pragmatic approach of chaos magic. Adaptability allows practitioners to explore and experiment with various techniques and philosophies without being bound by dogma. Chaos magic democratizes the practice of magic, making it accessible to anyone willing to engage their imagination and willpower.

To illustrate a ritual design incorporating an annular sigil, we'll start from scratch and formulate a new intention. The key to my backyard toolshed was lost, and we're seeking magical

augmentation to help find it. We'll first try to identify the annular polarities associated with our goal. Finding a lost item maps cleanly to the indigo polarity of Revelation. A key opens things, revealing their contents. Therefore, the key itself also maps to Revelation. Since the key is separate from us, and we want to move it toward us in space and time, we can add the polarity of Attraction to the mix. The basic shapes for our sigil are thus:



We then arrange these on a scratch pad, iterating until we form a sigil with which we're satisfied. The aesthetics of our design should resonate with us, unleashing a certain spark of attention when we find the one that works. We'll go with this design, which seems to hum with a certain numinous frequency:



We remove the following instruments from a dedicated storage cabinet:

- A pen used only for magical writing
- A ring donned only during magical workings, which we found in the dirt at a music festival while under the influence of some exotic compound
- Some incense and a candle we procured from an eccentric vendor at a local farmer's market, who

may or may not have had a glass eye

- A Tibetan singing bowl gifted to us by a beloved mentor
- A plate from our late grandmother's collection of antique china

We don the ring, pick up the pen, and draw out the final sigil design, circling it twice before cutting it out from the paper. We light the incense and use its smoke to bathe our coffee table, consecrating it for this ritual. We light the candle and place it on the altar along with our freshly minted sigil.

1. We then stand and extend our ringed finger to the east, saying in Esperanto: *Glavo tranĉas la aeron* (a sword cuts the air)
2. We turn 90 degrees to the south, saying: *Vergo fleksas kun fajro* (a staff bends with fire).
3. We turn 90 degrees to the west, saying: *Pokalo fandigas en akvon* (a cup melts into water).
4. Finally, we turn 90 degrees to the north, saying: *Pentakulo falas al la tero* (a pentacle falls to the ground).

When this is complete, we've created a magic circle around us that is charged with power by poetically invoking, in our magical language, the traditional Hermetic correspondences between the four cardinal directions, the four alchemical elements, and the four magical implements, which also correspond to the four suits of the tarot deck. This is all going quite well.

With our ringed finger, we touch the sigil and recite our intention: "I will find the key to my tool shed within 48 hours". We avoid words like *want* or *need* or *wish* so that our ritual will be aligned with a state of success instead of a state of lack. Remember, the universe is not a wish-granting machine. Magic works by drawing together things that resonate with a similar meaning. Embedding a sense of lack in a magical working will only attract more lack.

We repeat our intention two more times for good measure, then use the candle to set the sigil alight, placing it safely on the china as it burns away. When it's been reduced to ash, we repeat the incantation for our magic circle, starting with the north this time and ending on the east to un-draw the circle. We may now blow out our candle, douse our incense, and doff our ring. The ritual is complete.

Whether our lost key will appear to us within two days remains a roll of the dice, but with the applied weight of our will added to the dice, we have now loaded them in our favor. We may find ourselves stumbling upon the odd place where we absentmindedly left it. A friend who accidentally pocketed it during their visit may call to let us know they're swinging by to return it. We may come across a totally different long-lost key or, to play out a

familiar twist tinged with trickster energy, suddenly uncover the old instruction manual for installing the deadbolt with which the key came. Reality will likely respond, but not how we imagine it will. The universe will answer our call to dance with it, but it will always lead the dance, and we must do our best not to step on its toes.

The Spectral Cross

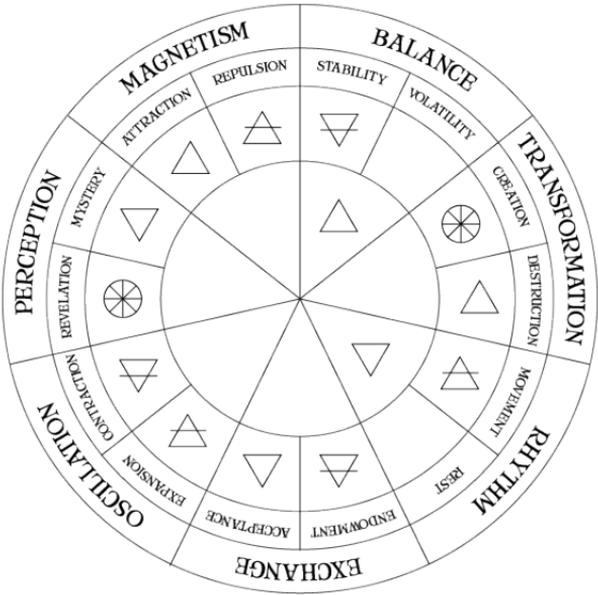
Divination is a way to tap into a universe where consciousness and reality are comingled via the mechanism of synchronicity, allowing access to information beyond our standard sensory perceptions. In a consciousness-first model, personal intentions can resonate with the flow of universal macro-consciousness, creating insights through symbols and patterns that manifest within the seeker's perception. This applies to divination and astrology, the latter a topic not covered by the scope of this book, but a conceptual cousin of divination nonetheless.

We distilled fundamental, irreducible elements of existence into The Spectral Annulus, grounding each component in first principles. We'll now use *The Spectral Cross* to demonstrate a personalized layer that can be superimposed on The Spectral Annulus, revealing how a new application can engage and expand the foundational principles.

There's a genre of mobile games wherein players begin with the four fundamental elements: earth, air, fire, and water. The core mechanic combines these basic elements to forge new materials and objects. Each successful combination unlocks new elements, which the player can pair in increasingly complex ways. Synthesizing the materials requires creative and lateral thinking,

exploring hundreds of possible combinations that cartoonishly mimic the transformations of alchemy. As players progress, they delve deeper into a crafted world of endless possibilities, reflecting the ancient alchemical quest to understand and manipulate the fundamental components of the universe.

Inspired by this idea, the core mechanic of *The Spectral Cross* involves randomly selecting and synthesizing two polarities from *The Spectral Annulus* to form a new material from their associated elements. The resulting material is then used as the metaphorical basis for describing the intersecting polarities. In the example below, the polarities Volatility (red fire) and Rest (yellow water) are selected, blending to form orange and steam. Thus, the output of this cross is **Orange Steam**.



Red + Yellow = Orange
 Fire + Water = Steam

Since combining two opposing polarities of the same hue would result in nullification, let's set a rule that each cross must include a polarity from two different hues. The randomized selector, therefore, must not be able to combine Stability and Volatility, the opposing polarities of Balance. Because of this parameter, the total number of possible permutations is 84. I've assigned a quadrangulation of words for each permutation to build a metaphorical box around the material each creates. For Orange Steam, the quadrangulation, based on the theme of steam/heat/pressure, is Tension, Agitation, Restlessness, Anticipation. The total output of this cross is then:

ORANGE STEAM

Volatility (red fire) + Rest (yellow water)

Tension, Agitation, Restlessness, Anticipation

The following materials can be created with The Spectral Cross:

Air + Water = **Rain**

Water + Earth = **Brick**

Air + Spirit = **Sun**

Air + Fire = **Smoke**

Water + Water = **Ocean**

Fire + Spirit = **Volcano**

Air + Earth = **Wood**

Fire + Earth = **Sand**

Water + Spirit = **Moon**

Air + Air = **Wind**

Earth + Earth = **Stone**

Earth + Spirit = **Soil**

Water + Fire = **Steam**

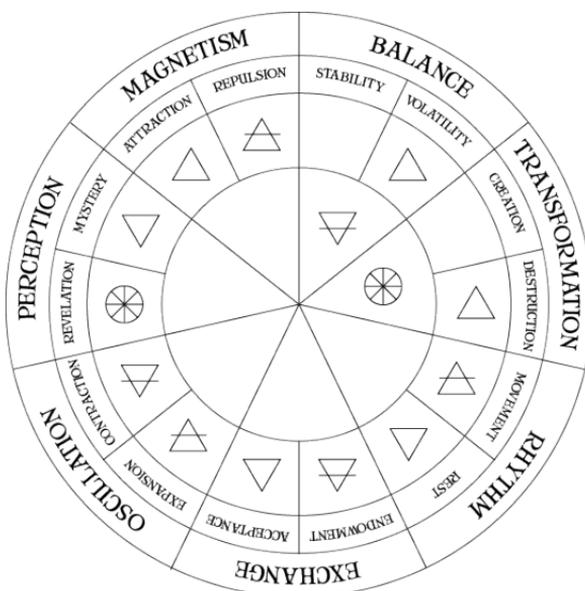
Fire + Fire = **Inferno**

Spirit + Spirit = **Cosmos**

The possible color combinations are:

- | | | |
|----------------------------|-----------------------------|----------------------------|
| Red + Orange = Vermilion | Orange + Green = Olive | Yellow + Violet = Orchid |
| Red + Yellow = Orange | Orange + Blue = Plum | Green + Blue = Dusk |
| Red + Green = Brown | Orange + Indigo = Sienna | Green + Indigo = Sage |
| Red + Blue = Violet | Orange + Violet = Coral | Green + Violet = Magenta |
| Red + Indigo = Rose | Yellow + Green = Chartreuse | Blue + Indigo = Cobalt |
| <i>Red + Violet = Pink</i> | Yellow + Blue = Green | Blue + Violet = Royal |
| Orange + Yellow = Golden | Yellow + Indigo = Bronze | Indigo + Violet = Lavender |

We want the concepts of the crosses to unfold organically, so the first possible combination when starting from red/Balance and moving clockwise is rooted in a metaphor of seeds and beginnings:



VERMILLION SOIL

Stability (red earth) + Creation (orange spirit)

Birth, Foundation, Beginning, Crystallization

I created a web application for The Spectral Cross that provides randomized intersections and pairs them with quadrangulations. You may be able to find it depending on whether you're reading this within a few years of its publication or long after The Internet has become a passé relic of the primitive culture from which it emerged. However, it'll be linked to my website for the foreseeable future.¹

A materialist might see the text associated with the crosses as merely a repository of thoughtful prompts, where almost every cross generally applies aphoristically. Interest in secular divination is currently on the rise, and many self-proclaimed rationalists are finding immense value in an eclectic array of divinatory practices. Whether practitioners prefer tea leaves, the *I Ching*, tarot cards, or runes, the tools and the surprising connections they often reveal between disparate ideas are widely used as springboards for intuition. From a psychologized standpoint, a person interfacing with a divinatory system is merely using the system as an affordance to apprehend the inscrutable cues within their subconscious mind.

1 justinckirkwood.net/spectral-cross

Even when viewed through a disenchanted prism, divination can be a powerful facilitator of introspection and self-discovery, yielding meaningful insights and creative prompts that can apply to everyday life. The Spectral Cross can provide affordances for exploring, reconciling, and manipulating different aspects of oneself or the universal principles to which one's personal aspects correspond.

You can find all 84 quadrangulations in the Index of this book.

CONCLUSION:
WRATH AND CLARITY



At times of change, the learners are the ones who will inherit the world, while the knowers will be beautifully prepared for a world which no longer exists.

- Alistair Smith

My recurring dreams of *Windows Color*, with its chromatic dynamism and sense of wonder set against the dehumanizing sea of cubicles, may have been a subconscious rebellion against traditional operating systems' monotonous and utilitarian aesthetic. My soul may have been calling out for a more playful and joy-filled relationship with the microcosmos in which I find myself situated for the majority of my waking life. Tragically, the design of operating systems has yet to substantially evolve in a way that lives up to their critical importance as a dominant frame for our cognition. OS interfaces contain the most crucial design decisions that digital architects can make, as they provide the digital cosmos that lays the groundwork for the entire subset of tools that live within them. With these profound implications in mind, developers should go into the design process with eyes open to this fact, considering how design decisions will shape the users' minds and actions as they steep in the affordances and internalize

the metaphysical structure of the environment. Wilson Miner, a digital designer who's worked for Apple, Facebook, and Square, said this in a talk at Webstock '12:

What goes on those screens is important. The things we choose to surround ourselves with will shape what we become. We're not just making pretty interfaces. We're in the process of building an environment where we'll spend most of our time for the rest of our lives. We're the designers. We're the builders. What do we want that environment to feel like? What do we want to feel like?

Imagine a sinister application of this concept. Imagine a virulent fascist who creates an operating system interface that bakes the values of nationalism, authoritarianism, domination, exclusion, and hatred into its design. How might daily use of such an interface subtly align the mentality of its users with this dark vision of the world? Like any technology, the intention behind it can be arbitrary, beneficial, or sinister. We should ensure we can trace the values of our digital environments to something that aligns with our own values.

Now imagine a metaphysical application of this concept, where we anchor the affordances of the design with the most elemental principles of creation we can identify. Imagine that, at every turn, our operating system echoes the Hermetic links between *above* and *below*. As we work, create, play, and communicate through the prism of such a design, we're subconsciously pulled into alignment with the natural flows of the cosmos. As much as I deeply long for the skill and talent to design such an interface myself, there's a long way to go and many iterations to cycle

through before humanity can manifest this sort of organic GUI. It would be a tall order for the ontology of the design to reflect the cosmology of the universe when the designs we're currently working with aren't even in alignment with the patterns of human thought. Coming back to our cranky techno-gadfly Ted Nelson, he writes in *Geeks Bearing Gifts*:

[The designers of the desktop interface] were trying to make things easy for people. But did they really respect the human mind? And were they really trying to define the use and appearance of the computer for all time?

Nelson takes particular issue with how the World Wide Web implemented his concepts of hypertext and hyperlinks, which is quite divergent from his vision of non-linear links between documents that would allow us to navigate information the way we navigate our thoughts. The interconnected webs of conceptual relationality he outlined much more closely mimic how our mind works than what he calls the “diving boards into darkness” (one-way hyperlinks) that we use to navigate between documents today.

In an operating system that mirrors human thought, we might middle-click on a file, at which point a conceptual map appears that shows how its contents conceptually link to other files within the system using a Venn diagram of overlapping references and themes. We could then select items within this diagram that take us to similar documents, which would then link back whence we came in order to maintain conceptual orientation. Links such as this would fulfill the dynamic vision of Ted Nelson, and amplify our thinking rather than sandbagging it.*

Now that we've outlined this elaborate system of labels, categories, and correspondences, it becomes especially important to remind ourselves that the map is not the territory. All interfaces cause information loss as they create affordances to grasp complexity, and annuli are no exception. It's an imperfect signifier that, like every metaphor, hides certain aspects of any given thing in favor of revealing others. It's crucial that we use our interfaces vigilantly, understanding that they're prisms, frames, filters, and lenses that profoundly modify the information that passes through.

Since an earlier chapter opened with a misattributed quote from Marshall McLuhan, we'll redeem the chapter's arc with an actual McLuhan quote. This is from his book *The Medium is the Massage: An Inventory of Effects*, a 1967 follow-up to his seminal work, *Understanding Media: The Extensions of Man*, which introduced his famous quote "The medium is the message". Both books deal with the proposition that a medium, as opposed to the content it contains, is the most important aspect of communication to scrutinize because it shapes our reality in such profound ways.

Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication. The alphabet, for instance, is a technology that is absorbed by the very young child in a completely unconscious manner, by osmosis so to speak. Words and the meaning of words predispose the child to think and act automatically in certain ways. It is impossible to understand social and cultural changes without a knowledge of the workings of media.

Religious, psychedelic, and near-death experiences. Mystical awakenings. Certain dreams. These encounters with the ineffable reveal the weak points of language, where the affordances of semantics break down and leave the attestant mute with awe. Many events resist the experiencer's attempts to rationally deconstruct them into words. They lie beyond the scope of what language can handle, leaving the experiencer unable to translate their gnosis into logos, their mystery into revelation.

You cannot describe the taste of exotic fruit with prose. You have to pluck the fruit from the tree (of Knowledge, say) and take a bite to experience proper understanding from lived experience. This, for me, is the appropriate use of magic. I tend to avoid utilizing magic for problem-solving or personal gain. I use magic to demonstrate to myself that the external world will mirror and respond to my internal world. And when I get the message, I hang up the phone for a while.

All of these symbols, metaphors, correspondence tables, rituals, and paraphernalia exist to lead us to a truth beyond words. The highest truth cannot be spoken; it must be enacted. These signposts and icons are connected with low-level binary code that we aren't intellectually equipped to translate into text, and so we rely on the mystical affordances of spirituality in order to flesh out what we're unable to apprehend with the affordances of rationality. The dichotomy between "believing in science" and "being a mystic" is false, obscuring the existence of multiple ways of seeing and knowing, as I hope this book has demonstrated.

Mysticism is about apprehending knowledge outside the scope of language. It's a close relative of art, and its vernacular is poetic in nature because the nature of the universe is poetic. The universe is filled with metaphorical echoes, recursive motifs, and thematic rhymes. Poetry, when crafted in alignment with this nature, violates the semantic rules of language, using it in ways that don't conform to its grammatical and syntactical conventions. Poetry becomes a transgressive act, a form of linguistic alchemy that transforms the mundane into the profound. It seizes words and phrases, bending them to reveal hidden layers of meaning, to unlock messages that standard discourse cannot convey. Each poem, each mystical incantation, and each symbol used in a ritual is a deliberate disruption—a hacking of the linguistic program to access information that lies dormant within our collective consciousness. Mysticism, art, and poetry strive to liberate us from the tyrannies of literal meaning and practical utility, affording us access to the liberating realms of the ineffable.

In the act of creation, an artist stands at the nexus of heaven and earth and pulls the unseen into the realm of the seen. This makes the artist an active participant in the construction of the universe, incarnating artifacts of the dreaming universal mind. The act of creation takes nerve, pluck, and audacity. I propose that all human beings, in homage to their inner divine spark, should endeavor to create art of some variety. Further, I suggest that all art should aim ludicrously high in its ambition, for a work of art whose ultimate goal is anything less than revolution is mere decoration. There is no shame, however, in settling for beauty, novelty, and truth when revolutionary aspirations fall short.

Avoid shame at all costs. The epithets “pretentious” and “self-indulgent” hurled by those who’ve opted out of the co-creation of the universe should be worn as badges of honor by the ones with the nerve to participate. One should never kneel before the altar of validation or obey the laws of convention. As far as I’m concerned, the only thing to kneel before is The Great Mystery, and the only thing to obey is the ever-present voice of our innate compassion for all souls who struggle within it.

AFTERWORD:
KEYS BLUE KEYS



Here we go.

A song of tension. A sense of history. A taste coiled in the mouth. Locked. Arranged with familiar buttons, devices, and compromising emanations.

Sprung cylinder and azurine rotation. The unmoved mover pivots a lever, and we press on quickly from here. We press on to lower spheres. Low: a gaslight. Even lower: arc salt.

A cup of smoke in the middle of a bed. Vapors are stolen. The heat wanders, thinned out like a bored tuxedo. Gestures, living in skin. The walls, counted with gravity chants. A starfish on the floor collides with cobalt bones. Quickly to the door. The way is given to a creaking blade and turned by sapphire teeth.

The halls we walk in our sleep. Closets filled with hollow corpses. The colored necks of men. The glass boxes and boo-white laps waiting in the dark. Fixed orbs tumble when touched in the shade, and the wards collapse.

The spyglass lumbers, scanning the plane for texture. It seeks columns with barbarous levitation or the lift of unfurled espionage.

Sustained flux, obvious and polar. Aimed in the direction of inclined faces. Pins are engaged. Then comes a wailing set of hinges.

Boundary men, holding up the mirronade. Frothy midwives screaming into gauze. Long legs, short legs. They could rule the world. They could sing lies like drains. Deny fevers. Fall off the edge of time and crack whips on the way down. Ignoring the latches; deaf to all echoes.

Secrets and sob noises woven into a madrigal. Finally, tucked behind the eyelids: the prize.

Steps made quietly over bare teeth. The beating heart of secret weather. The source is here. Fragile roots. Severed hands still clutching marrow. All the origins and authors, the still waters. Over there: your answer written on the wall.

A left foot swinging even further inside, finding yoke moan and rook-sight. Ram thoughts, and helotronen. Yellow plunge. The elemental machine pulling step-wine from pansion, and crow tea from fury leaves.

For a while.

And then gravity chants come flooding in. The stem falls out of sight. A black bell rings, and the teeth turn back.

Here we go.

Back to the place where we polish nickels. Adjust dials. Where we leave warm blankets in the fog. Where we shave hens. Decipher the angles of mud. Fill inkwells with hot sand, and squeeze the steam from furious boulders. But still, we remember the torque of inner maths.

Oh, but the torque of inner maths.

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VERMILION VOLCANO

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VERMILION SAND

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VERMILION INFERNO

Volatility (red fire) + Destruction (orange fire)

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